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Did the market overvalue the accounting quality after the mandatory switch to IFRS in Europe?

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Did the market overvalue the accounting quality after the mandatory switch to IFRS in Europe?

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ABSTRACT

Studies indicate that mandatory adoption of International Financial Reporting Standards (IFRS) reduced the cost of capital for adopting firms and improved analysts' forecasts. However whether the market responded appropriately has not been investigated. We examine how the market prices earnings reported under IFRS to test the moderated confidence hypothesis, which suggests that overreaction is likely when signals are imprecise. We find that, in a seven European country-wide study, the market overpriced earnings reported under IFRS. The overreaction is located in glamour stocks where the market to book ratio is high, and particularly in medium sized companies. The moderated confidence hypothesis is also consistent with our finding that overreaction reduces slightly in 2009, as the financial crisis hits and investors examine their portfolios more rationally. We also find that any improvement in accounting quality varies across individual countries, being limited to France, Germany and the Netherlands. Our results are robust to variations in the measurement of accruals quality.

1. INTRODUCTION

In 2005 International Financial Reporting Standards (IFRS) were mandatory for quoted companies within the European Union (EU). This was a major step to promote harmonisation within the EU, mirroring the audacious promotion of worldwide standards by the International Accounting Standards Board (IASB) since its inception in 1973. This project involved much promotion, debate and argument. Issues raised by skeptics include Goeltz (1991) who claims that international standards are not necessary, and more recently Ball, Robin and Wu (2003) and Ball (2006) who argue that enforcement matters as much as standards in achieving high quality reporting. Variations in enforcement may explain the evidence in many studies of the limitations to harmonisation between countries, despite their adoption of IFRS (e.g. Kvaal and Nobes, 2012, Nobes, 2011, Zeff and Nobes, 2010 and Nobes, 2009). The cost of the development and promotion of IFRS was (and still is) significant both for regulators and companies. Of course, the harmonisation of standards does not mean that all companies improve the quality of their financial reporting, but some improvement is to be expected. Therefore, in this context, an important question is whether earnings quality improved following the mandatory adoption of IFRS within the EU. An associated, and equally important question is whether financial markets overreacted, believing that IFRS had given rise to a greater improvement in earnings quality than was achieved.

Over confidence is well understood to arise when there is too much focus on the strength and not enough on the weight of the signal (Griffin and Tversky, 1992). It is therefore possible that investors placed too much weight on the promotional activity of the IASB (the strength), and not enough on the actual changes achieved by the new IFRS standards (the weight). A second reason for overreaction is that the key concern of professional investors is to place the reported performance of a company within the current

macroeconomic circumstances (Barker, 2000). Therefore they are likely to take on trust the benefits which are said to come from a common, and improved, set of global accounting standards. Another reason for an overreaction to earnings is that investors are likely to regard earnings, based on complex rules, as an imprecise signal, and therefore would overreact to the signal as predicted by the moderated confidence hypothesis of Bloomfield, Libby and Nelson (2000). Furthermore, it would have been difficult for individuals to deviate from the group consensus about the benefits of IFRS (Janis, 1982 and Shiller, 2001), especially since when judgments about earnings quality are complex and feedback is limited.

We base our investigation on a sample of 10,331 firm-year observations of seven European countries over the 1993–2010 period. In order to test overreaction, we construct an earnings quality-adjusted measure of earnings, as part of an earnings and investment opportunities valuation model similar to that of Modigliani and Miller (1961). Given that each observation of earnings is already adjusted for earnings quality, the weight that investors put on the "adjusted-earnings" in the valuation model should change after IFRS adoption. Therefore, there should be no change in the coefficient on earnings quality weighted earnings after the mandatory adoption of IFRS in 2005. Our results show that the coefficient on quality-adjusted earnings increased in the post 2005 era, suggesting an overreaction to the improvement in earnings quality. Our inferences are robust to alternative measures of earnings quality.

Our follow-up analysis aims to shed light on the nature of the overreaction. We identify the groups of stocks involved and the time profile of overreaction. The results show that overreaction increased from 2005, but stopped in 2009, perhaps due to a realignment of expectations as a result of the financial crisis or the belief that fair value accounting had actually triggered financial crisis (Laux and Leuz, 2009). We also find that the overreaction is particularly evident in medium sized companies. These results are consistent with the

moderated confidence explanation for overreaction, since medium-sized companies have a smaller following by financial analysts; this means that there is less expertise available to interpret an earnings announcement, which is then regarded as an imprecise signal. In addition, our results indicate that overreaction is largely confined to high market to book ratio companies, which also were found to have relatively lower earnings quality. This evidence also supports the moderated confidence hypothesis since earnings of a lower quality are less precise, thereby leading to overreaction.

In addition, we conduct an individual country analysis for the sample countries. Other studies typically provide their results for the aggregated pooled data of all the countries investigated, with some adjustment for the institutional differences between countries, specifically: (i) the difference between IFRS and domestic GAAP and (ii) the enforcement of accounting standards. However, accounting for these other factors is problematic. There are weaknesses in capturing differences between IFRS and domestic GAAP, since equal weighting is given to each area, and often the differences do not capture whether domestic GAAP is worse or better than IFRS (see for example Nobes, 2009). There are also problems with enforcement (or rule of law) indices since they are typically based on perceptions and therefore may suffer from inter country differences in perceptions. This has led some researchers to regard such indices as fatally flawed (Kurtz and Schrank, 2007). In addition, the enforcement indices may not be specific enough to accounting (Preiato, Brown and Tarca 2012). A further disadvantage of investigations at the aggregate level is that it is not clear whether the results obtained are to be found throughout the sample or whether they are driven by just a few countries. This distinction is clearly important from a policy viewpoint. Our results document significant improvement of accounting quality only in France, German and the Netherlands.

Our study makes the following distinct contributions to the extant literature. First, in addition to investigating whether mandatory IFRS improved earnings quality, our paper is one of the few attempts to explicitly assess whether the market's response is efficient. This can provide a deeper understanding of the benefits and costs of the IFRS mandate. Given the significant cost involved in the mandatory adoption, the answer to the question has practical implications. To the best of our knowledge, this is the first study to suggest that the market overreacted to the improvement in earnings quality after mandatory adoption of IFRS. Standard setters will find the results of this study interesting. Secondly, the exploration of overreaction extends our understanding of the nature and the potential determinants of overreaction towards mandatory IFRS. Finally, we inform the debate on the differential impact of IFRS on accounting quality across countries. Our individual country analysis within the Europe suggests that improvement of accounting quality has been limited to a few countries.

The rest of the paper is organised as follows. The next section outlines the background and prior work. The third section describes the contribution, which is followed by the research design, the sample selection process and results. The final section is the conclusion.

2. LITERATURE REVIEW

2.1 The impact of IFRS on equity prices

Following the mandatory adoption of IFRS in Europe by quoted companies from 2005, an important question, in view of the significant costs involved by both regulators and companies, is whether the quality of financial reporting improved as a result. One approach to assessing the impact of IFRS is to examine how the security market is affected. Several studies have followed this path and generally the findings are positive. For example, Armstrong, Barth and Jagolinzer (2010) examine 3-day returns of 3,265 European firms around 16 events in the run up to mandatory adoption which affected the likelihood of

adoption of IFRS in Europe. They find a positive market price reaction except in code law countries, which is consistent with investors' concerns over enforcement. Other studies analyse the stock price effects of the IFRS disclosures once they are mandatory, such as Daske, Hail and Leuz (2008) and Li (2010). Both of these studies find that there is a positive price impact, associated with a reduction in the cost of capital, but only in countries where there is strong legal enforcement.

A weakness of examining the stock price response is that the evidence captures simply the association between shifts in the market's assessment of securities and the adoption of IFRS; the cause of the shift is left ambiguous. The implied change is an improvement in earnings quality, but this is not documented. In the light of this drawback, other studies have tried to identify an improvement in analysts' information environment following IFRS adoption. If an improvement in forecast accuracy can be found, then it is more likely that mandatory IFRS has improved reporting quality. Examples of such studies are Byard, Li and Yu (2011) and Horton, Serafeim and Serafeim (2013). They find that analysts' forecast errors are reduced following IFRS adoption, which suggests that mandatory IFRS improved financial disclosure. In contrast, a recent study seems to cast doubt on whether these improvements are, in fact, due to IFRS adoption. Christensen, Hail and Leuz (2013) examine changes in liquidity (as measured by bid-ask spreads) and find that the increases following mandatory IFRS are largely driven by changes in enforcement.

2.2 The impact of IFRS on earnings quality

Other studies take a more obvious approach and tackle the substantive issue directly, assessing whether or not accounting quality has improved post IFRS adoption. However, this approach is not as effective as it might seem since earnings quality is an imprecise concept. Given the importance of earnings to equity valuation, the vast majority of studies define

accounting quality as earnings quality, but even this limited aspect of accounting quality is difficult to capture. A number of approaches have been taken.

First, since earnings quality is to be found largely in the accruals process, studies such as Barth, Landsman and Lang (2008) examine the relative volatility of earnings to cash flows, with low volatility being taken as evidence of poor quality (i.e. earnings smoothing). This measure of earnings quality is consistent with Ball and Shivakumar (2005) where accruals capture the early recognition of losses, and hence earnings are more volatile than cash flows.

A second measure of earnings quality used is the extent to which companies manage earnings towards a positive target, following Burgstahler and Dichev (1997a). However, this measure is criticised by several papers, since there are other explanations for the results (see for example Durtschi and Easton, 2009, Beaver, McNichols and Nelson, 2007, and Ayers, Jiang and Yeung, 2006).

Thirdly, in a related vein, studies such as Ahmed, Neel and Wang (2013) and Barth et al. (2008) examine whether companies following IFRS report losses more frequently than non IFRS companies. However, this measure captures only a very minor part of the expected improvement; IFRS should provide improved information about performance well ahead of the company being in a loss making situation.

A fourth approach to earnings quality is the well-trodden path of estimating earnings management through discretionary accruals, based on the cross-sectional version of Jones (1991) model. Examples of such studies are Ipino and Parbonetti (2011) and Jeanjean and Stolowy (2008). This measure of quality has promise since it is a well-established and broad measure of quality. It is also able to identify several types of earnings management from income smoothing to manipulation towards a target. It achieves this by defining discretionary accruals as those which cannot be explained by the current activity of the firm, which is measured by the change in sales and the level of plant property and equipment.

Given the variety of research methods used to investigate earnings management under IFRS, it is not surprising that the results are mixed. For example: Ahmed et al. (2013) find that IFRS firms exhibit significant increases in income smoothness and aggressive reporting of accruals, and a significant decrease in timeliness of loss recognition; Jeanjean and Stolowy (2008) find that earnings management has not declined; and Barth et al. (2008), albeit focussing on voluntary adoption, find an improvement in earnings quality. These varied findings contrast with the unambiguous results from the stock price impact and the analyst forecast studies which suggest an improvement in earnings quality following mandatory IFRS adoption for countries which enforce the standards.

2.3 Moderated confidence hypothesis and overreaction

Despite numerous studies of the impact of mandatory adoption of IFRS on earnings quality or the information environment, none of the studies discussed above examines whether the market respond to the mandatory adoption efficiently. Given the new and unfamiliar features of IFRS earnings measurements, we investigate this efficiency issue using the moderated confidence hypothesis of Bloomfield, Libby and Nelson (2000). In their setting, an investor has only a noisy signal of the reliability of information; as the noise of the signal increases, so does the investor's overestimation of the value of the information. The moderated confidence hypothesis has been examined in a number of settings. Cheng and Eshleman (2014) find that the supplier-firm shareholders overweight the earnings announcement of their major customers, as the customer's earnings news contains imprecise information about the suppliers' future cash flows. In the experiment by Smith (2010), investors were asked to make predictions and trading decisions for 24 separate firms based on the accounting information received. The results indicate that naïve investors show greater confidence and trading aggressiveness when the quantity and consistency of information is

increased. This research highlights the possible unintended consequences of increased disclosure in financial reporting.

3. RESEARCH DESIGN

The main thrust of our research design is to construct an equity valuation model in which current earnings is adjusted for earnings quality. We then control the model for any changes in expectations about future earnings. If the market acts rationally, and regards the quality adjusted earnings as a precise signal, then the weight put on it (ie. the value of the coefficient) should not shift between pre and post IFRS periods. A positive shift in the coefficient in the post IFRS period would suggest that investors view IFRS earnings as an imprecise signal, not fully understanding the improvement in quality. This situation, according to the moderated confidence hypothesis, leads to overreaction.

3.1 Measure of earnings quality

Our measure of earnings quality is based on the cross-sectional Jones (1991) model, but with the extension suggested by McNichols (2002) derived from Dechow and Dichev (2002). A potential problem with measuring earnings management based on the residuals from the cross-sectional Jones (1991) model, is that some residuals may be informative about future cash flows rather than the product of manipulation. For example, accruals which are an early recognition of future losses are treated as earnings management unless they are correlated with either the change in revenue and or with plant property and equipment (the explanatory variables in the Jones model).

McNichols (2002) deals with this by using the relation between accruals and cash flows developed by Dechow and Dichev (2002) to purge the Jones (1991) model residuals of these

informative deviations. We estimate the residual from the cross sectional Jones (1991) model extended by McNichols (2002) as follows :

$$ACC_{j,t} = \theta_0 + \theta_1 CFO_{j,t-1} + \theta_2 CFO_{j,t} + \theta_3 CFO_{j,t+1} + \theta_4 \Delta Rev_{j,t} + \theta_5 PPE_{j,t} + \mu_{j,t} \quad (1)$$

where: $ACC_{j,t}$is the change in working capital; $CFO_{j,t}$ is cash flows from operations of firm j; $\Delta Rev_{j,t}$ is change in sales of firm j; and $PPE_{j,t}$ is plant property and equipment for company j, respectively[1]. All variables are scaled by total assets at the end of fiscal year t. Our measure of earnings quality for each company, $AQ_{j,t}$, is then based on its residual from Equation (1) as follows:

$$AQ_{j,t} = 1 - |\mu_{j,t}| \quad (2)$$

where $\mu_{j,t}$ is the residual estimated from Equation (1) above.

The absolute value of the residual is taken so that accounting quality is the same for both negative and positive residuals, and is deducted from one so that smaller residuals are associated with greater accounting quality than larger residuals.[2] The measurement of earnings quality by a single number is consistent with observed practice amongst chief finance officers and standard setters (Dichev, Graham, Harvey and Rajgopal, 2013).

3.2 The valuation model

In order to investigate whether the market reacts efficiently to the mandatory adoption of IFRS, we construct an earnings-quality adjusted measure of earnings, as part of an earnings and investment opportunities valuation model similar to Modigliani and Miller (1961) as follows:

$$MV_{j,t} = \alpha + \beta_0 TA_{j,t}^{-1} + \beta_1 WE_{j,t} + \beta_2 WE_{j,t} * \mathrm{G}DP_{j,t} + \beta_3 WE_{j,t} * MD_{j,t} + \beta_4 BV_{j,t} + \beta_5 BV * MD_{j,t} + \beta_6 EX_{j,t} + \varepsilon_{j,t} \quad (3)$$

[1] The exact definitions of all the variables are contained in the Appendix.

[2] Obviously, a problem arises if the absolute value of a residual exceeds one, since accounting quality for that observation would then be negative. However, in the McNichols accruals model, the dependent variable (accruals) is scaled by assets and therefore a negative AQ measure is unlikely. Based on the whole sample the residuals are: mean=0.041; standard deviation=0.035; min=0.000; max=0.367.

where: $MV_{j,t}$ is market value of firm j at the end of fiscal year t; $TA_{j,t}$ is total assets at the end of fiscal year t; $WE_{j,t}$ is weighted earnings, defined as earnings multiplied by accounting quality, $AQ_{j,t}$; ; $BV_{j,t}$ is book value at the end of fiscal year t; and $EX_{j,t}$ is a proxy for excess returns on investmentat the end of fiscal year t. All these variables are scaled by total asset at the end of fiscal year t. $GDP_{j,t}$ is the annual growth of gross domestic product in the country relevant to company j in fiscal year t; $MD_{j,t}$is a dummy variable taking a value of 1 if a firm adopts IFRS from 2005 and 0 otherwise.

The first main component of the valuation model is earnings, which is almost the universal approach to valuation in practice; see for example Govindarajan (1980), Arnold and Moizer (1984), Barker (1999b) and Demirakos, Strong and Walker (2004). There is also empirical support for this emphasis on earnings from Dechow, Hutton and Sloan (1999) who find that the model which has the smallest forecast error in explaining security prices is the earnings capitalisation model.[3] However, Barker (1999a) in his interviews with professional investors finds that they do not take earnings at the face value, but make adjustments to earnings based on their assessment of management. The rationale is that the management of the company will have a strong influence on future performance; and since the management is observable, it can be evaluated. In the spirit of this adjustment, we multiply reported earnings with our estimate of earnings quality AQ, to give a quality adjusted measure of performance, named weighted earnings (WE) which can be viewed as a precise signal. The construction of this variable allows us to test the moderate confidence hypothesis. In our model, the impact of weighted earnings on market value is allowed to vary. The reason for this is that investors are buying not just this year's earnings but a stream of earnings. Expectations of these future earnings are captured by including an interactive term (WE*GDP) of weighted earnings with the general conditions in the economy, as reflected in

[3]This is the model in Dechow, Sloan and Sweeney (1999), (Table 5, Panel B) where ω=1 and γ=0 (identical to ω=0 and γ=1).

the annual growth of gross domestic product. For completeness, we also include weighted earnings as a separate variable, just in case the standard (unconditional) P/E model applies.

The second main component of the model is an investment term (EX). Demirakos et al. (2004) find that investment factors also play a part in valuation in industries such as pharmaceuticals. This arises from the importance of research and development and other firm specific actions which may be taken to improve the position of the company. In order to reflect this aspect of valuation we include a capital investment variable in addition to earnings.

A third component is a book value variable (BV) in order to capture the ability of the company to adapt to changes in the economic environment, as suggested by Burgstahler and Dichev (1997b) and Ashton, Cooke and Tippett (2003). When these components of valuation are included, our valuation equation has a similar structure to the classical Modigliani and Miller (1961) investment opportunities approach to valuation, and also to that suggested by Shen and Stark (2013).

Finally, we include a dummy variable (MD) to reflect pre IFRS and post IFRS periods. The variable is interacted with book value (BV*MD), to allow a different weight to be placed on book value after IFRS, since many IFRS rules are 'fair-value' oriented and therefore favor the balance sheet, suggesting a positive value for the its coefficient. The dummy variable is also interacted with weighted earnings (WE*MD) in order to test the moderated confidence hypothesis. Since weighted earnings is already adjusted for the quality of its accruals, the impact of mandatory IFRS is already captured; therefore the coefficient on WE*MD should be zero. A positive (negative) coefficient is an indication of overreaction (under reaction) to the effect of IFRS on accounting quality. The valuation model is given in equation 3.

Other features of the model are as follows. First, the theory of the valuation equation does not require that the variables are scaled by total assets. In our model scaling is applied to all

variables to reduce heteroscedasticity, and hence is also applied to the original constant term β_0. Secondly, the excess returns from the new investment variable, $EX_{j,t}$ is not adjusted for accounting quality since our quality measure is based on accruals and is unlikely to affect the reporting of investment expenditure.

4. SAMPLE

4.1 Selection criteria

Firm valuation, earnings quality measures, and other firm-level variables (including market to book value, earnings, cash flows from operation, capital expenditure, accounting standards that companies follow) are based on accounting and finance data of eight EU countries (UK, France, Germany, Sweden, Netherland, Denmark, Switzerland and Spain) from 1993 to 2010 and obtained from Thomson Reuters Datastream. The Appendix lists the definition of all the raw variables used in this paper. In order to be included for analysis, companies need to have at least eight years of data[4]. To mitigate the influence of outliers, all firm-level continuous variables are winsorised at the top and bottom 1 percent of their distributions, and observations with market to book value greater than 3 and lower than -3 are omitted. The final sample consist 10331firm-year observations from seven EU countries.

4.2 Descriptive statistics

Panel A of Table1 provides descriptive statistics of the variables used in the tests for both full sample and sub-sample for mandatory adopters of IFRS.

[Insert Table 1 about here]

Table 1 indicates that there is a significant decrease in GDP growth in the period after IFRS adoption. Given that the period after mandatory adoption of IFRS covers the financial crisis since 2008, it is understandable that there is a distinct decrease of GDP growth for the sub-sample period. An interesting fact is that for the whole period, the mean of book value

[4]Due to the selection criteria, there are no observations for Spain left for analysis.

(BV) is lower than the market value (MV). Following the mandatory adoption of IFRS, BV remains the same as before, reflecting the very limited impact of mark-to-market in IFRS; but MV rises despite the fall in the growth of GDP.

Pearson correlations coefficients between all variables used in the regression models are reported in Panel B of Table 1. Panel B shows a correlation between market value and earnings with a correlation coefficient of 0.31 (*p*-value <0.001). This finding suggests that the market value captures common information in earnings quality-adjusted earnings. Panel B also shows a positive relationship between the excess return on capital investment (EX) and market value (MV), suggesting that the market does value the capital investment by firms. In addition, accruals (ACC) has a negative correlation coefficient of -0.49 (p<0.001) with current cash flows from operation. These results are consistent with Dechow and Dichev (2002), McNichols (2002) and Ball and Shivakumar (2005).

5. RESULTS

5.1 Has earnings quality improved?

Panel A of Table 2 lists the descriptive statistics of earnings quality for each individual country. The average earnings quality of Germany and Denmark is below the average for countries in the EU. However, an interesting finding is that the UK has the biggest standard deviation of earnings quality (0.0412). Given that the number of observations is the largest for the UK (and includes most listed companies), it is not surprising that there is substantial variation of accruals quality across firms.

We then estimate the following regression to examine whether earnings quality improved after the mandatory switch to IFRS:

$$AQ_{j,t} = \gamma + \delta MD_{j,t} \quad (4)$$

where $AQ_{j,t}$ is earnings quality of company j at the end of fiscal year t defined by Equation (2) and $MD_{j,t}$is a dummy variable taking a value of 1 if a firm adopts IFRS from 2005 and 0 otherwise.

The impact of the mandatory adoption of IFRS on earnings quality is measured by the coefficient δ and is shown in Panel B of Table 2. A positive δ implies that accruals quality has improved after the mandatory adoption of IFRS in 2005. The results for the whole sample indicate a positively significant coefficient of 0.0031 (with a t-statistic of 4.00), suggesting that overall the average accrual quality has improved following the mandatory adoption of IFRS. Our results are consistent with the results of Chen, Tang, Jiang and Lin (2010) and Zeghal, Chtourou and Fourati (2012), which find that accounting quality has improved at the aggregate level of 15 EU countries.

[Insert Table 2 about here]

However, in contrast to the aggregate sample, our country by country analysis finds that accruals quality has improved only for a few countries. The inferences to be made from prior studies with a pooled sample therefore need to be dealt with caution; the findings at the aggregate level are not necessarily valid for all countries in the sample. The countries where mandatory IFRS has improved accruals quality are France[5], Germany, and the Netherlands. France, Germany are usually classified as 'legal origin countries', where the shareholder protection has been constantly improved in the last two centuries (Siems, 2007). With strong law enforcement to protect shareholders' interest, it is not surprising that earnings quality improved in France and Germany after IFRS adoption. It is interesting to notice that our results show that the earnings quality in the UK has not improved. This makes sense since there is only a limited difference between the UK GAAP and IFRS. Other European countries

[5]This finding for France contrasts with Jeanjean and Stolowy (2008) who find that earnings management in France increased after IFRS adoption. However, they use the ratio of small losses to small profits measure which, as mentioned above, may have causes other than earnings management (see for example, Durtschi and Easton, 2009).

(Sweden, Denmark, Switzerland and the Netherlands) are 'transplant countries', which copied the law of one of the origin countries at one point in time. It might take time for shareholders protection to be effective. Our results could be explained by this argument, and suggest that (with the exception of the Netherlands) earnings quality has not yet improved in transplant countries.

5.2 Did the market respond efficiently?

Table 3 presents our underreaction/overreaction tests of equation 3. The coefficients of each parameter are reported, together with robust t-statistics adjusted for firm and year clustering in parentheses.

[Insert Table 3 about here]

Firstly, as discussed, in the model we include three variables that are related to earnings: weighted earnings, which is defined as earnings multiplied by earnings quality; the weighted earnings interacted by the annual growth of GDP, and weighted earnings interacted by MD, the mandatory adoption dummy variable of IFRS. We mention earlier that the impact of weighted earnings is likely to be conditioned by macroeconomic factors. Our results for the whole sample and for individual countries generally reflect these expectations. Out of the seven countries, the coefficients for β_2 are statistically significant at 1 percent level for samples of France, Sweden, the UK, Netherland and Switzerland. This implies that investors from these five countries put weight on the weighted earnings interacted by the change in GDP. In other words, when investors from these five countries value equities in the market, they focus not only on the current earnings, but also on a stream of future earnings, and they expect that the future earnings are dependent on macroeconomic conditions. However, for Germany and Denmark, the coefficients β_1 are statistically significant rather than coefficients β_2, which implies that investors from these two countries do not condition their expectations of future earnings by the current performance of the macro economy. Overall, these results

indicate that investors value quality adjusted earnings. This finding is consistent with Gaio and Raposo (2011), who also found aggregate earnings quality has significant impact on firm value.

The second aspect of the results in Table 3 is that the coefficient of β_3,the weighted earnings interacted by the mandatory adoption dummy variable of IFRS is positive and statistically significant for all countries. The impact of IFRS on earnings quality has been incorporated into the measure of weighted earnings. Therefore, if investors react rationally to the mandatory adoption of IFRS, the coefficient of the interacted weighted earnings should be insignificant. Our results of a positively significant β_3 coefficient indicate that investors overweight the impact of the mandatory adoption of IFRS on the market value. Furthermore, our evidence indicates that earnings quality has improved in only three countries out of our eight sample countries. These findings contrast with the received wisdom that IFRS has been beneficial and supports studies which question the impact of IFRS on accounting quality.

It might be argued that improvements in the comparability of financial statements arising from the adoption of IFRS is a potential explanation for our overreaction findings. Increased comparability of earnings may lead to a greater weight being placed on them, i.e. beyond that justified by the improvement in accruals quality. Based on the current work on comparability, this is unlikely to be the case. First, the paper by DeFranco, Kothari and Verdi (2011) specifies that the comparability of earnings is not, in fact, a component of valuation. Any difficulties of comparison between two companies arising from the incomparability of their earnings is not impounded in stock price because of the existence of alternative sources of information. Secondly, the evidence presented by Yip and Young, (2012) (Table 4 Panel B) shows that comparability effects are very small, and that if anything IFRS has reduced comparability across national frontiers.

The third aspect of our test in Table 3 relates to the book value component of our model which is adjusted to capture the possible changes due to IFRS 'mark-to-market' orientation. The interaction between book value and the dummy variable for IFRS adoption (β_5) captures the potential increased emphasis given to the book value after adoption of IFRS. For both pooled sample and individual country sample, all the coefficients on book value (β_4) are statistically significant at the 1 percent level, which suggests that investors from our sample countries do consider book value when they value a firm. The coefficient β_5 is statistically significant only for Denmark. It is 0.21 and significant at 1 percent level, implying that investors from Denmark put extra weight on the book value after the adoption of IFRS.

The final aspect of the overreaction test is that seven out of eight coefficients for excess returns on capital investment are statistically positive across countries. We believe that this variable is able to reflect the impact of expended capital investment on the market value. Our evidence suggests that market value of a company increases with the marginal profit obtained from further capital investment.

5.3 Exploring the nature of overreaction

In Table 4 we list the results of the exploration of the nature of the overreaction to the improvement in earnings. The general approach is to replace the overreaction variable of equation 3 by a series of dummy variables to represent the various categories considered.

[Insert Table 4 about here]

First, we test the time profile of the overreaction. A reasonable expectation might be that overreaction would gradually decline, as investors learn from their over optimistic assessments (Nicolosi, Peng and Zhu, 2009). The revised form of equation 3 is as follows:

$$MV_{j,t} = \alpha + \beta_0 TA_{j,t}^{-1} + \beta_1 WE_{j,t} + \beta_2 WE_{j,t} * \mathrm{GDP}_{j,t} + \beta_3 WE_{j,t} * MD_{j,t} + \beta_{3,i} \sum_{i=2006}^{2009} WE * MD * Year_i + \beta_4 BV_{j,t} + \beta_5 BV * MD_{j,t} + \beta_6 EX_{j,t} + \varepsilon_{j,t} \quad (3a)$$

where $Year_i$ is a dummy variable for each year following the mandatory adoption of IFRS in 2005.

The results are reported in Table 4 under the column "Year". The coefficient $\beta_3$reflects the overreaction to IFRS adoption in year 2005, and coefficients $\beta_{3,2006}$, $\beta_{3,2007}$,$\beta_{3,2008}$, and $\beta_{3,2009}$ reflect the incremental overreaction towards the IFRS adoption in each calendar year compared with 2005. It can be seen that coefficient β_3 is 0.46, which is weakly significant at 10%, suggesting that investors overreact to the mandatory adoption of IFRS in 2005. Interestingly, the coefficients for 2006, 2007 and 2008 are increasing and all significant, indicating that with the implementation and promotion of IFRS, investors continuously overreact to the IFRS adoption. However the incremental overreaction is not significant in 2009, suggesting that the overreaction returned to its 2005 level. This might be due to investors revising their expectations of IFRS prompted by the financial crisis or the belief that fair value accounting, to a certain, extent triggered financial crisis (Laux and Leuz, 2009). They suggest that as assets and liabilities are measured at fair values, the unrealised gains become part of distributable profit and thus erode the company's operating capital. The eventual recognition of this possibility may have lessened the market's reaction to IFRS earnings.

Secondly, we examine whether the overreaction is associated with firm size which is typically is associated with market behavior (Bujaki and Richardson, 1997; Bhushan, 1989). We divide companies in to three groups; large, medium, and small. The revised firm of equation 3 is as follows:

$$MV_{j,t} = \alpha + \beta_0 TA_{j,t}^{-1} + \beta_1 WE_{j,t} + \beta_2 WE_{j,t} * \mathrm{GDP}_{j,t} + \beta_3 WE_{j,t} * MD_{j,t} +$$

$$\beta_{3,small}\, WE * MD * SMALL + \beta_{3,medium} WE * MD * MEDIUM + \beta_4 BV_{j,t} + \beta_5 BV * MD_{j,t} +$$

$$\beta_6 EX_{j,t} + \varepsilon_{j,t} \qquad (3b)$$

Where "SMALL", "MEDIUM" and are both dummy variables to stand for each category. SMALL takes a value of 1 if a company has total assets that fall into the bottom 25th percentile, and zero otherwise; MEDIUM takes a value of 1 if a company has total assets that fall into the 25th to 75th percentile. The coefficient β_3 then stands for the overreaction towards the large-sized stocks, those in the top 25% percentile.

The results are presented in the column "Size", where we can see significant overreaction in all the three categories, with investors overreacting to the earnings of medium-sized companies the most. It is difficult to know the cause of this since firm size proxies for many different economic conditions (see Bujaki and Richardson, 1997); but it may be that medium sized companies were expected to have the greatest benefit from IFRS. The reporting quality of large companies may already have been of sufficient quality so that expectation of IFRS were limited; and expectations for the smaller quoted companies may have been similarly restricted in view of the relative simplicity of their economic activities. This explanation regarding medium-sized companies is consistent with the moderated confidence hypothesis, according to which overreaction is especially likely when the signal is imprecise (see for example, Cheng and Eshleman, 2014, and Bloomfield et al., 2000). Medium sized companies are typically followed by fewer analysts compared with large companies (Bhushan, 1989) and therefore there is likely to be less precision in the market concerning these companies.

Finally, we test whether overreaction is associated with the market to book ratio since some argue that stocks with high market to book ratios are over-valued due to excessive optimism (Lakonishok, Shleifer and Vishney, 1994; and La Porta, Lakonishok, Shleifer and Vishney, 1997); others suggest that market to book is a measure of risk (Fama and French, 1995). We test the effect of the market to book ratio in the following revised equation 3.

$$MV_{j,t} = \alpha + \beta_0 TA_{j,t}^{-1} + \beta_1 WE_{j,t} + \beta_2 WE_{j,t} * \mathrm{GDP}_{j,t} + \beta_3 WE_{j,t} * MD_{j,t} +$$

$$\beta_{3,hmtbv}\, WE_{j,t} * MD_{j,t} * HMTBV_{j,t} + \beta_4 BV_{j,t} + \beta_5 BV_{j,t} * MD_{j,t} + \beta_6 EX_{j,t} + \varepsilon_{j,t}$$

(3c)

where HMTBV is a dummy variable which takes a value of 1 if the market to book ratio is larger than or equal to 1.5, and 0 otherwise. The coefficient β_3 is then the overreaction coefficient for companies with a market to book ratio below 1.5 [6]. Table 4 shows that the coefficient $\beta_{3,hmtbv}$ is highly significant, in contrast to β_3 which is not significant. This may suggest that overreaction to IFRS is an aspect of the general overreaction to the performance of glamour companies. In order to investigate the reason for the overreaction of glamour stocks, we list earnings quality by the quantile of the market to book ratio in Panel B of Table 4. Interestingly, it shows that the average earnings quality of the top two quantiles (which are defined as glamour stocks in the equation 3c is lower than those of the bottom two quantiles. This means that the earnings of glamour stocks are of poorer quality, and less precise, than other stocks, which the moderated confidence hypothesis suggests leads to overreaction.#

5.4 Robustness tests

The first test we run is to check a key assumption in our main equation 3 valuation model. This assumption is that investors do not distinguish between accruals and cash flows and is made since we model market behavior as an under/overreaction to weighted earnings. Although many studies find that investors do not differentiate between cash flow and accruals (Sloan 1996; Fairfield, Whisenant and Yohn, 2003) it is important to test the assumption for our sample. We measure accruals quality, as before, with the absolute residual from the McNichols (2002) accruals model (our equation 1). However, equation 3 is varied, to allow different weights to be placed on cash flow and accruals. In equation 3d below, the coefficient $\beta_1$is the coefficient for weighted earnings (as before), but $\beta_{1,ACC}$ is the incremental

[6]The rationale for selecting 1.5 as the cut-off point is that if sorted by quintile, the average MTBV of the top two quintiles is 1.5. Result is similar if the top quintile is used.

value of the coefficient for accruals; similarly, β_3 is the overreaction coefficient for weighted earnings, and $\beta_{3,ACC}$ is the incremental value of the overreaction coefficient for accruals.

$$MV_{j,t} = \alpha + \beta_0 TA_{j,t}^{-1} + \beta_1 WE_{j,t} + \beta_{1,\mathrm{ACC}}\mathrm{ACC_{j,t}}.\mathrm{AQ_{j,t}} + \beta_2 WE_{j,t} * \mathrm{GDP}_{j,t} + \beta_3 WE_{j,t} * MD_{j,t} + \beta_{3,ACC}\mathrm{ACC_{j,t}}.\mathrm{AQ_{j,t}} * MD_{j,t} + \beta_4 BV_{j,t} + \beta_5 BV * MD_{j,t} + \beta_6 EX_{j,t} + \varepsilon_{j,t} \quad (3d)$$

The results are given in Table 5, and the findings are very similar to those of the original equation in Table 3. For the sample as a whole, and for France, Germany and the Netherlands, there is overreaction (β_3 is significant) but neither $\beta_{1,ACC}$ nor $\beta_{3,ACC}$ are significant, indicating that investors do not distinguish between cash flows and accruals; it is in these countries (as well as in the pooled sample) that IFRS improved accounting quality. For the UK and Switzerland, $\beta_{3,ACC}$ is significant in addition to β_3; in Switzerland, there is a smaller overreaction to accruals than to cash flow ($\beta_{3,ACC}$ <0), whereas in the UK the overreaction to the accruals component is larger than for the cash flow component ($\beta_{3,ACC}$ >0). For Sweden and Demark, neither β_3 nor $\beta_{3,ACC}$ are significant, indicating no overreaction to IFRS; however, this is not greatly different from Table 3 since the coefficients there are only weakly significant (i.e. at the 10% significance level).

The second type of robustness check we undertake is to repeat some of our tests with two alternative measures of earnings quality. The first alternative measure is based on the performance matched discretionary accrual quality proposed by Kothari, Leone and Wasley (2005) (named as AQK) given as equation (1a).

$$ACC_{j,t} = \theta_0 + \theta_1 TA_{j,t}^{-1} + \theta_2 \Delta Rev_{j,t} + \theta_3 PPE_{j,t} + \theta_4 ROA_{j,t} + \mu^k{}_{j,t} \quad (1a)$$

where $\mathrm{ROA_{j,t}}$ is defined as return on assets of firm *j* at the end of fiscal year *t*.

The second alternative measure follows Hope, Thomas and Vyas (2013) (named as AQH) and adjusts equation (1) for negative cash flows. Ball and Shivakumar (2005) find that the relation between accruals and cash flows changes when cash flow is negative. The revised equation 1 is shown as equation 1b, below.

$$ACC_{j,t} = \theta_0 + \theta_1 CFO_{j,t-1} + \theta_2 CFO_{j,t} + \theta_3 CFO_{j,t+1} + \theta_4 \Delta Rev_{j,t} + \theta_5 PPE_{j,t}$$

$$+ \theta_6 DCFO_{j,t} + \theta_7 CFO_{j,t} * DCFO_{j,t} + \mu^h{}_{j,t} \quad (1b)$$

where $DCFO_{j,t}$ is a dummy variable which takes a value of 1 when $CFO_{j,t} < 0$, and zero otherwise.

We repeat the methodology used in section 3.1 to obtain the proxies for earnings quality, which are measured as one minus the absolute value of the residuals estimated from equation 1a (for AQK) and from equation 1b (for AQH). Earnings are multiplied by AQK or by AQH, to give WE^k or WE^h, and applied to the main valuation model equation (3).The results using the alternative measures of accounting quality are shown in Table 6 and Table 7. Table 6 (Panel A) gives the descriptive statistics and Table 6 (Panel B) gives the impact of IFRS. The results of valuation models with new accounting quality measures are shown in Table 7.

Considering the impact of IFRS, for the sample as a whole and for the AQH measure the results are almost identical to Table 2. Although the AQK measure gives a similar result for the sample as a whole, there are differences at the country level: there is no improvement from IFRS in France and the Netherlands in Table 6, in contrast with Table 2, and there is improvement in the UK and Switzerland which is absent from Table 2. These differences do not affect the overreaction results in Table 7, which, for both AQK and for AQH measures, are almost identical to Table 3: there is overreaction to weighted earnings in all countries. With all the three measures of accounting quality, the results indicate that market overreacted to the impact of mandatory adoption of IFRS on earnings quality.

6. CONCLUSION

Our investigation of accounting quality is based on the McNichols' model of accruals quality (McNichols, 2002) and suggests that accounting quality, using a pooled sample of eight EU countries, improved after the mandatory adoption of IFRS in 2005. However, tests

at the individual country level show that the improvement in accounting quality was limited to only a few countries. This evidence adds to the results of prior research which question whether accounting quality improved generally after mandatory IFRS in 2005.

We also assess the magnitude of the market reaction to any improvement in earnings quality. To achieve this, we adjust a standard earnings valuation model so that the earnings component is adjusted for accruals quality. Given that earnings are already quality adjusted, there should be no significant change to the earnings coefficient following the switch to IFRS. In contrast to this expectation, we find that the earnings coefficient increases, which indicates that the market overreacted to any improvement arising from IFRS. Intuitively, this state of affairs is not too surprising, since IFRS was (and is) actively promoted by the regulators. Furthermore, given that market agents and analysts are typically not accounting specialists, it is not surprising that the benefits of IFRS were taken on trust.

Examining the overreaction more carefully, we find that it is confined to glamour stocks, i.e. those that have a market to book value above 1.5; and although overreaction exists throughout the size spectrum of companies, it is greatest in medium sized companies. These two aspects suggest that overreaction here may be explained by the moderated confidence hypothesis, which argues that overreaction is likely when signals are imprecise. Glamour stocks have a relatively high value precisely because over optimistic expectations have replaced economic analysis based on reported performance; such companies are surrounded by imprecise information about the future, which is the basis for overreaction to IFRS earnings. Furthermore, information about medium sized companies is especially prone to imprecision in view of the relatively small market following. This interpretation is consistent with our other finding that overreaction increases from 2005 but then reduces slightly in 2009; perhaps as the financial crisis hits, investors examine their portfolios more rationally. We undertake a number of robustness tests. First we allow the market to distinguish between

the cash flow component of earnings to be different from the accruals component. We also vary the measure of accruals quality. For both variations in method, our conclusions remain the same.

REFERENCES

Ahmed, A.S., Neel,M.J. and Wang, D. (2013). Does mandatory adoption of IFRS improve accounting quality? Preliminary evidence. *Contemporary Accounting Research,* 30(4), 1344-1372.

Armstrong, C., Barth,M.Jagolinzer, A. and Riedl, E. (2010).Market reaction to the adoption of IFRS in Europe. *The Accounting Review*,85 (1), 31-61.

Arnold, J., and Moizer, P. (1984).A survey of the methods used by U.K. investment analysts to appraise investments in ordinary shares. *Accounting and Business Research*,14, 195-207.

Ashton,D., Cooke, T. and Tippett, M. (2003). An Aggregation Theoremfor the Valuation of Equity UnderLinear Information Dynamics, *Journal of Business Finance and Accounting*, 30(3&4),413-440.

Ayers, B. C., Jiang, J. and Yeung. P. E. (2006). Discretionary accruals and earnings management: An analysis of pseudo earnings targets. *The Accounting Review*,81 *(*3*)*,617–52.

Ball R., Robin, A. and Wu. J.S.(2003). Incentives versus standards: Properties of accounting income in four East Asian countries. *Journal of Accounting and Economics*, *36*(1-3), 235-70.

Ball, R. (2006). International Financial Reporting Standards (IFRS): Pros and Cons for investors. *Accounting and Business Research*, 36 (Special Issue), 5-27.

Ball, R., and Shivakumar. L. (2005). Earnings quality in UK private firms: comparative loss recognition timeliness. *Journal of Accounting and Economics*, 39, 83–128.

Barker, R. G. (1999a) The role of dividends in valuation models used by analysts and fund managers.*European Accounting Review*, 8, 195–218.

Barker R. G. (1999b) Survey and market-based evidence of industry-dependence in analysts' preferences between the dividend yield and price-earnings ratio valuation models. *Journal of Business Finance and Accounting*, 26(3-4), 393-418.

Barker, R. G. (2000).FRS3 and analysts' use of earnings. *Accounting and Business Research*, 30(2), 95-109.

Barth, M.E., Landsman, W.R.andLang.M. (2008).International accounting standards and accounting quality. *Journal of Accounting Research,* 46, 467-498.

Beaver, W. H., McNichols, M. F. and Nelson. K. K.(2007).An alternative interpretation of the discontinuity in earnings distributions. *Review of Accounting Studies*, 12,525–556.

Bhushan, R. (1989). Firm characteristics and analyst following, *Journal of Accounting and Economics*, 11(2-3): 255-74.

Bloomfield, *R.*, Libby, R., and Nelson, M, (2000) Underreactions, overreactions and moderated confidence, *Journal of Financial Markets*, 3: 113-137.

Burgstahler, D., and Dichev.I. (1997a).Earnings management to avoid earnings decreases and losses. *Journal of Accounting and Economics*, 24 (1), 99–126.

Burgstahler, D., and Dichev.I. (1997b).Earnings, Adaptation and Equity Value, .*Accounting Review*, 72(2),187–215.Bujaki, M. and Richardson, A. 1997. A citation trail review of the uses of firm size in accounting research, *Journal of Accounting Literature*, 16, 1-27.

Byard, D., Li, Y.andYu.Y. (2011).The effect of mandatory IFRS adoption on financial analysts' information environment. *Journal of Accounting Research,* 49 (1), 69–96.

Chen H., Tang, Q. Jiang, Y. and Lin,Z. (2010). The role of International Financial Reporting Standards in accounting quality: Evidence from the European Union. *Journal of International Financial Management and Accounting*, 21(3): 220-278.

Cheng, C., and Eshelman, J. (2014). Does the market overweight imprecise information? Evidence from customer earnings announcements. *Review of Accounting Studies*, 19(3), 1125-1151.

Christensen,H. B., Hail, L. and Leuz, C. (2013).Mandatory IFRS reporting and changes in enforcement. *Journal of Accounting and Economics*,56, Issues 2–3, Supplement 1,147–177.

Daske, H., Hail, L.Leuz, C. and Verdi.R.(2008). Mandatory IFRS reporting around the world: Early evidence on the economic consequences. *Journal of Accounting Research*, *46*(5): 1085-142.

DeFranco,G., Kothari, S.P. and Verdi R.S. (2011). The benefits of financial statement comparability, *Journal of Accounting Research*, 49(4): 895-931.

Dechow, P., and Dichev.I. (2002). The quality of accruals and earnings: The role of accrual estimation errors. *The Accounting Review,* 77 (Supplement), 35–59.

Dechow, P., Sloan,R.andSweeney,A. (1995). Detecting earnings management.*The Accounting Review*, 70 (2): 193-225.

Dechow, P., Hutton,A. and Sloan,R..(1999). An empirical assessment of the residual income valuation model. *Journal of Accounting and Economics,* 26 (1-3): 1-34.

Demirakos, E., Strong,N. and Walker,M..(2004). What valuation models do analysts use? *Accounting Horizons*, 18: 221–240.

Dichev, I., Graham, J.Harvey,C. andRajgopal, S. (2013). Earnings quality: evidence from the field. *Journal of Accounting and Economics*, 56, 1–33.

Durtschi, C., and Easton,P.(2009).Earnings management? Erroneous inferences based on earnings frequency distrbutions. *Journal of Accounting Research,* 47: 1249-1281.

Fairfield, P. M. Whisenant, J. S. and Yohn, T. L. (2003).Accrued Earnings and Growth: Implications for Future Profitability and Market Mispricing. *The Accounting Review:* 78(1). 353-71.

Fama, E., and French, K. (1995).Size and Book-to-Market Factors in Earnings and Returns. *Journal of Finance*, 131–155.

Gaio, C., and Raposo,C.(2011). Earnings quality and firm value: International evidence. *Accounting and Finance*,51: 467-499.

Goeltz, R. K. (1991). International accounting harmonization: The impossible (and unnecessary?) dream. *Accounting Horizons,* 5, 85-88.

Govindarajan, V. (1980). The objectives of financial statements: An empirical study of the use of cash flow and earnings by security analysts. *Accounting, Organizations and Society,* 5(4): 383-392.

Griffin, D. and Tversky, A. (1992).The weighting of evidence and the determinants of overconfidence, *Cognitive Psychology*, 24, 411-435.

Hirshleifer,D.,Hou, K.,Teoh, S. H. and Zhang, Y. (2004).Do investors overvalue firms with bloated balance sheets?, *Journal of Accounting and Economics*, 38: 297-331.

Hong, H., Lim, T. and Stein, C.J. (2000).Bad News Travels Slowly: Size, Analyst Coverage, and the Profitability of Momentum Strategies, *Journal of Finance*, 55 (1): 265–95.

Hope, O., Thomas, W.B., and Vyas, D. (2013).Financial reporting quality of U.S. private and public firms. *Accounting Review*, 88(5), 1715-1742.

Horton, J., Serafeim, G.andSerafeim,I.(2013). Does mandatory IFRS adoption improve the information environment? *Contemporary Accounting Research,* 30(1): 388-423.

Ipino, E., and Parbonetti, A. (2011). Mandatory IFRS adoption: The trade-off between accrual and real-based Earnings Management. Available at SSRN:http://ssrn.com/abstract=2039711.

Janis, I. L. (1982). Groupthink: Psychological Studies of Policy Decisions and Fiascoes. Boston, MA: Houghton Mifflin.

Jeanjean, T., and Stolowy, H.(2008). Do accounting standards matter? An exploratory analysis of earnings management before and after IFRS adoption. *Journal of Accounting and Public Policy*, 27(6): 480-494.

Jones, J. (1991). Earnings management during import relief investigations. *Journal of Accounting Research*, 29:193-228.

Kothari, S. P., Leone, A. J. and Wasley, C. E. (2005). Performance matched discretionary accrual measures. *Journal of Accounting and Economics*, 39(1): 163-97.

Kurtz, M., and Schrank, A. (2007). Growth and governance: Models, measures, and mechanisms. *Journal of Politics*, 69 (2): 538-54.

Kvaal, E., and Nobes,C. W. (2012). IFRS policy changes and the continuation of national pattern of IFRS practice. *European Accounting Review*, 21(2): 343-371.

La Porta, R., Lakonishok, J., Shleifer, A., and Vishny, R. (1997), Good News for Value Stocks: Further Evidence on Market Efficiency, *The Journal of Finance*, 52(2): 859-874

Lakonishok, J., Shleifer, A., and Vishny, R. (1994),Contrarian Investment, Extrapolation, and Risk, *The Journal of Finance*, 49(5): 1541-1578

Laux, C. and Leuz, C. (2009).The crisis of fair-value accounting; Making sense of the recent debate. *Accounting, Organizations and Society*, 34: 826-34.

Li, S.Q. (2010). Does mandatory adoption of International Financial Reporting Standards in the European Union reduce the cost of equity capital? *The Accounting Review*, 85 (2): 607-636.

Lo, A. (2004). The adaptive markets hypothesis: market efficiency from an evolutionary perspective. *Journal of portfolio management*, 30: 15-29.

McNichols, M.F.(2002). Discussion of the quality of accruals and earnings: the role of accrual estimation errors. *The Accounting Review*, 77(supplement): 61-69.

McNichols, M.F. and Stubben, S.R. (2014).The effect of target-firm accounting quality on valuation in acquisitions. *Review of Accounting Studies*, forthcoming

Modigliani, F. and Miller,M.H.(1961).Dividend policy, growth, and the valuation ofshares. *Journal of Business*, 34, 411–433.

Nicolosi, G. Peng, L. and Zhu, N. (2009).Do individual investors learn from their trading experience? *Journal of Financial Markets*, 12(2), 317-336.Nobes, C.W. (2006). The survival of international differences under IFRS: Towards a research agenda. *Accounting and Business Research*,36 (3), 233–45.

Nobes, C.W. (2009).Observations on measuring the differences between domestic accounting standards and IAS. *Journal of Accounting and Public Policy*, 28 (2), 148-153.

Nobes, C.W. (2011).IFRS practices and the persistence of accounting system classification. *Abacus,* 47 (3), 267-283.

Preiato, J. P., Brown, P.R.andTarca,A.(2012). Mandatory adoption of IFRS and analysts' forecasts: How much does enforcement matter? *University of Western Australia, Australian School of Business Research Paper* No. 2009 ACCT 01. Available at SSRN: http://ssrn.com/abstract=1499625.

Shen, Y. and Stark, A.(2013).Evaluating the effectiveness of model specifications and estimation approaches for empirical accounting-based valuation models.*Accounting and Business Research,* 43 (6), 660-682.

Shiller, R. J. (2001).Bubbles, human judgment and expert opinion.*Yale Cowles Foundation Discussion Paper No.1303.* Available at SSRN: http://ssrn.com/abstract=275515.

Siems, M. M. (2007). Shareholder protection around the world. *Centre for Business Research, University of Cambridge Working Paper No. 359*. Available at: http://www.cbr.cam.ac.uk/pdf/wp359.pdf

Sloan, R.G. (1996). Do stock prices fully reflect information in accruals and cash flows about future earnings? *The Accounting Review*, 71(3): 289-315.

Smith, S.D. (2010). Confidence and trading aggressiveness of naive investors: effects of information quantity and consistency. *Review of Accounting Studies*, 15(2), 295-316.

Yip,R.W. and Young,D. (2012). Does mandatory IFRS adoption improve information comparability?*Accounting Review,* 87(5), 1767-1789.

Zeff, S.A., and Nobes,C.W.(2010). Has Australia (or any other jurisdiction) 'adopted' IFRS? *Australian Accounting Review,* 20 (2), 178-184.

Zeghal, D., Chtourou, S.M.andFourati, Y. M.(2012). The effect of mandatory adoption of IFRS on earnings quality: Evidence from the European Union. *Journal of International Accounting Research,* 11 (2), 1-25.

APPENDIX

Variable Definition

$ACC_{j,t}$	change in working capital scaled by total assets at the end of fiscal year t
$BV_{j,t}$	Book value of firm j in year t scaled by total assets at the end of fiscal year t
$CAPEX_{j,t}$	The ratio of capital expenditure of firm j in year t scaled by total assets at the end of fiscal year t
$CFO_{j,t}$	Cash flows from operations of firm j in year t scaled by total assets at the end of fiscal year t
	Dummy variable taking the value 1 if $CFO_{j,t}$is negative, and 0 otherwise

$DCFO_{j,t}$	Net operating income of firm j in year t scaled by total assets at the end of fiscal year t
$Earnings_{j,t}$	Excess return on investment scaled by total assets at the end of fiscal year t, defined as: $CAPEX_{j,t}*[(MTBV_{j,t}-IR_{j,t})/IR_{j,t}]$
$EX_{j,t}$	Dummy variable which takes a value of 1 if the market to book ratio is larger than 1.5, and 0 otherwise
HMTBV	3-month T-bill rate at the end of fiscal year t
	Dummy variable which takes the value of 1 if a firm adopts IFRS from 2005, and 0 otherwise
IR_t	Dummy variable which takes a value of 1 if a company has total assets that fall between the
$MD_{j,t}$	25^{th} percentile and 75^{th} percentile, and zero otherwise
	Market to book ratio of firm j in year t
MEDIUM	
$MTBV_{j,t}$	
$MV_{j,t}$	Market value of firm j in year t scaled by total assets at the end of fiscal year t
$PPE_{j,t}$	Gross value of property, plant and equipment of firm jscaled by total assets at the end of fiscal year t
$\Delta Rev_{j,t}$	Change in total sales of firm j between year t-1 and t scaled by total assets at the end of fiscal year t
$ROA_{j,t}$	Return on assets of firm j at the end of fiscal year t
SMALL	Dummy variable which takes a value of 1 if a company has total assets that fall into the bottom 25^{th} percentile, and zero otherwise
$TA_{j,t}$	Total assets of firm j at the end of fiscal year t
$WACC_{j,t}$	Weighted accruals, defined as the product of $ACC_{j,t}$and$AQ_{j,t}$
$WCFO_{j,t}$	Weighted operation cash flows, defined as the product of $CFO_{j,t}$and$AQ_{j,t}$
$WE_{j,t}$	Weighted earnings, defined as the product of $Earnings_{j,t}$ and $AQ_{j,t}$
$GDP_{i,t}$	Annual GDP growth of country i of fiscal year t
$Year_i$	Dummy variable for each year since the mandatory adoption of IFRS of 2006

All the variables are measured in thousand units of local currency.

TABLES

Table 1. Descriptive Statistics and Correlation Matrix for observations 1993-2010

Panel A Descriptive Statistics

Full period sample (1993-2010)

Name	N	Mean	Median	SD	Percentiles	
					10	90
MV	10331	0.6512	0.5404	0.5115	0.1909	1.2387
BV	10331	0.4376	0.4132	0.2753	0.1866	0.7107
Earnings	10331	0.0627	0.0626	0.0812	-0.0165	0.1468
CFO	10331	0.0839	0.0819	0.0820	0.0023	0.1698
ACC	10331	-0.0212	-0.0186	0.0794	-0.1021	0.0556
CAPEX	10331	0.0565	0.0432	0.0579	0.0120	0.1098
EX	10331	0.0003	0.0002	0.0006	0.0001	0.0007
GDP	10331	1.7136	2.4329	2.2143	-0.9679	3.8149

Mandatory IFRS period sample (2005-2010)

Name	N	Mean	T-stat for difference	Median	SD	Percentiles	
						10	90
MV	3820	0.6747**	2.24	0.5744	0.4710	0.1986	1.2797
BV	3820	0.4396	0.39	0.4117	0.2705	0.2008	0.7126
Earnings	3820	0.0659**	2.23	0.0639	0.0738	-0.0121	0.1481
CFO	3820	0.0822	1.09	0.0794	0.0822	0.0044	0.1639
ACC	3820	-0.0163***	3.57	-0.0140	0.0699	-0.0962	0.0572
CAPEX	3820	0.0484***	-7.74	0.0373	0.0543	0.0100	0.0935
EX	3820	0.0004***	7.83	0.0002	0.0007	0.0001	0.0008
GDP	3820	0.5854***	-32.35	1.6831	2.8688	-3.9744	3.6327

Panel B Pearson Correlation

	MV	EARNINGS	CFO	ACC	EX	BV
MV	1					
EARNINGS	0.31***	1				
CFO	0.16***	0.53***	1			
ACC	0.15**	0.48***	-0.49***	1		
EX	0.14***	0.08***	0.16***	-0.08***	1	
BV	0.61***	0.19***	0.08***	0.12***	0.02	1

Panel A shows descriptive statistics of variables used in the paper.
MV is defined as the market value of firm j in year t; BV is defined as the book value of firm j in year t; Earnings is defined as net operating income of firm j in year t; CFO is defined as cash flows from operations of firm j in year t ; ACC is defined as the change in working capital at the end of fiscal year t; CAPEX is the ratio of capital expenditure of firm j in year t at the end of fiscal year t; EX is the excess return on investment at the end of fiscal year t, defined as: $CAPEX_{j,t}*[(MTBV_{j,t}-IR_{j,t})/IR_{j,t}]$; All variables are scaled by total assets at the end of fiscal year; GDP is defined as annual GDP growth of country i of fiscal year t
Whole sample includes 10,331 observations with 1175 firms. S.D is standard deviation. Pearson correlations between variables have been reported in panel B. *, **, and *** denote significance of coefficients at the 10%, 5% and 1% level respectively, using a two tailed test.

Table 2.The Impact of Mandatory Adoption of IFRS on Earnings Quality

Panel A: Descriptive Statistics of Earnings Quality

	All	France	Germany	Sweden	UK	Netherland	Denmark	Switzerland
Mean	0.9621	0.9630	0.9511	0.9644	0.9688	0.9627	0.9606	0.9657
Standard Deviation	0.0382	0.0347	0.0378	0.0320	0.0412	0.0355	0.0345	0.0257
Number of Observation	10331	1747	1784	735	3319	629	670	877

Panel B: The Impact of Mandatory Adoption of IFRS on Earnings Quality

$$AQ_{j,t} = \gamma + \delta MD_{j,t} \quad (4)$$

	All	France	Germany	Sweden	UK	Netherland	Denmark	Switzerland
δ	0.0031	0.0038	0.0036	0.0010	0.0018	0.0058	-0.0046	0.0008
	(4.00***)	(2.43***)	(2.02**)	(0.41)	(1.16)	(1.96*)	(-1.55)	(0.45)
Number of observations	10331	1747	1784	735	3319	629	670	877

Panel A of Table 2 presents the descriptive statistics of accounting quality, which is defined by equation 1 and 2:

$$ACC_{j,t} = \theta_0 + \theta_1 CFO_{j,t-1} + \theta_2 CFO_{j,t} + \theta_3 CFO_{j,t+1} + \theta_4 \Delta Rev_{j,t} + \theta_5 PPE_{j,t} + \mu_{j,t} \quad (1)$$

$$AQ_{j,t} = 1 - |\mu_{j,t}| \quad (2)$$

CFO is defined as cash flows from operations of firm j in year t; ACC is defined as the change in working capital in year t; ΔRev is defined as the change in total sales of firm j between year t-1 and t; PPE is defined as gross value of property, plant and equipment of firm j in year t; all variables are scaled by total assets at the end of fiscal year t. Panel B of Table 2 reports the results of equation 4. Robust t-statistics are in parentheses. *, **, and *** denote significance of coefficients at the 10%, 5% and 1% level respectively, using a two tailed test.

Table 3. Market Value and Earnings Quality-Adjusted Earnings

$$MV_{j,t} = \alpha + \beta_0 TA_{j,t}^{-1} + \beta_1 WE_{j,t} + \beta_2 WE_{j,t} * GDP_{j,t} + \beta_3 WE_{j,t} * MD_{j,t} + \beta_4 BV_{j,t} + \beta_5 BV_{j,t} * MD_{j,t} + \beta_6 EX_{j,t} + \varepsilon_{j,t} \quad (3)$$

	Coefficient	All	France	Germany	Sweden	UK	Netherland	Denmark	Switzerland
TA^{-1}	β_0	1786.53	3675.32	2276.93	-5518.04	1633.61	904.10	2732.03	-15245.94
		(2.91***)	(3.48***)	(1.15)	(-0.73)	(2.28**)	(0.64)	(0.19)	(-1.79*)
WE	β_1	0.61	-0.03	0.36	-0.09	0.27	0.38	0.67	0.28
		(4.03***)	(-0.13)	(2.13**)	(-0.26)	(0.97)	(1.16)	(2.57***)	(0.71)
WE*ΔGDP	β_2	0.29	0.44	0.06	0.24	0.45	0.45	0.15	0.38
		(11.80***)	(6.95***)	(1.60)	(5.36***)	(8.45***)	(9.95***)	(1.81*)	(5.49***)
WE*MD	β_3	1.25	0.66	0.87	1.09	1.73	1.04	0.81	1.00
		(4.46***)	(1.98**)	(4.67***)	(1.81*)	(4.95***)	(2.11**)	(1.73*)	(2.61***)
BV	β_4	0.79	0.99	0.96	0.86	0.83	1.02	0.64	0.94
		(8.06***)	(7.54***)	(7.09***)	(4.64***)	(7.42***)	(7.77***)	(6.21***)	(6.43***)
BV*MD	β_5	-0.09	0.02	-0.02	-0.15	-0.11	0.06	0.21	-0.04
		(-1.29)	(0.35)	(-0.34)	(-1.06)	(-1.63)	(0.54)	(2.80***)	(-0.45)
EX	β_6	73.50	56.56	240.04	236.23	425.32	127.30	206.99	14.95
		(3.36***)	(1.93*)	(5.39***)	(5.16***)	(6.63***)	(1.47)	(4.26***)	(2.11**)
constant	α	0.17	0.08	0.06	0.21	0.11	0.02	0.13	0.15
		(4.02***)	(1.71*)	(1.62)	(3.04***)	(1.95*)	(0.40)	(3.91***)	(3.05***)
No. of observations		10331	1747	1784	735	3319	629	670	877
No. of firms		1175	205	199	85	397	71	64	92
R^2		45.41	45.51	61.43	53.12	40.73	54.12	53.07	49.61

Table 3 shows estimation results of equation 3. MV is defined as the market value of firm j in year t; BV is defined as the book value of firm j in year t; EX is the excess return on investment, defined as: $CAPEX_{j,t}*[(MTBV_{j,t}-IR_{j,t})/IR_{j,t}]$; all variables are scaled by total asset at the end of fiscal year t; TA is defined as total assets of firm j at the end of fiscal year t; WE is defined as the product of Earnings and AQ; GDP is defined as annual GDP growth of country i of fiscal year t; MD is a dummy variable which takes the value of 1 if a firm adopts IFRS from 2005, and 0 otherwise. The sample comprises firm-year observations of seven countries in the EU between 1993 and 2011. We base the analysis on industry fixed firm and year effect regression. Robust t-statistics are in parentheses. *, **, and *** denote significance of coefficients at the 10 %, 5% and 1% level respectively, using a two tailed test.

Table 4.Exploring the nature of overreaction to IFRS adoption

Panel A

	Independent Variables	Coefficient			
			Year	**Size**	**Glamour**
	WE	β_1	0.83	0.61	0.80
			(4.86***)	(8.17***)	(5.18***)
	WE*ΔGDP	β_2	0.20	0.29	0.24
			4.17(***)	(18.95***)	(10.09***)
	WE*MD	β_3	0.46	1.08	0.16
			1.73(*)	(9.30***)	(0.53)
	BV	β_4	0.80	0.79	0.80
			(8.09***)	(48.07***)	(7.92***)
	BV*MD	β_5	-0.09	-0.09	-0.08
			(-1.37)	(-5.80***)	(-1.09)
	EX	β_6	79.05	73.75	68.51
			(3.35***)	(14.98***)	(3.35***)
Year	WE*Year2006	$\beta_{3,2006}$	1.03		
			(6.26***)		
	WE*Year2007	$\beta_{3,2007}$	1.13		
			(5.61***)		
	WE*Year2008	$\beta_{3,2008}$	1.23		
			(6.18***)		
	WE*Year2009	$\beta_{3,2009}$	-0.19		
			(-0.50)		
Size	WE*SMALL	$\beta_{3,small}$		-0.05	
				(-0.33)	
	WE*MEDIUM	$\beta_{3,medium}$		0.39	
				(3.10***)	
Glamour	WE*HMTBV	$\beta_{3,hgrowth}$			2.38
					(14.86***)
No. of observations			10331	10331	10331
R^2			45.61	45.59	48.98

Panel B Earnings quality by the quantile of the market to book ratio

	All	Top 1st Quantile	2nd Quantile	3rd Quantile	Bottom 4th Quantile
Mean	0.9621	0.9588	0.9623	0.9642	0.9632
Standard Deviation	0.0382	0.0372	0.0348	0.0330	0.0463
Number of Observation	10331	2611	2528	2645	2547

Table 4 shows estimation results of equation 3a, 3b, 3c, and 3d. Year2006, Year2007, Year2008 and Year2009 are all dummy variables for calendar year. "SMALL" is a dummy variable which takes value of 1 when its total assets fall into the bottom 25th percentile; "MEDIUM" is a dummy variable which take value of 1 when its total assets fall into the medium 50th percentile. "HGROWTH" is a dummy variable which takes value of 1 if the market to book value is higher than 1.5.
We base the analysis on industry fixed firm and year effect regression. Robust t-statistics are in parentheses. *, **, and *** denote significance of coefficients at the 10 %, 5% and 1% level respectively, using a two tailed test.

Table 5.Valuation Model with Decomposed Earnings Quality Adjusted Earnings

$$MV_{j,t} = \alpha + \beta_0 TA_{j,t}^{-1} + \beta_1 WE_{j,t} + \beta_{1,ACC} ACC * AQ + \beta_2 WE_{j,t} * GDP_{j,t} + \beta_3 WE_{j,t} * MD_{j,t} + \beta_{3,ACC} ACC * AQ * MD + \beta_4 BV_{j,t} + \beta_5 BV_{j,t} * MD_{j,t} + \beta_6 EX_{j,t} + \varepsilon_{j,t} \quad (3d)$$

	Coefficient	All	France	Germany	Sweden	UK	Netherland	Denmark	Switzerland
TA^{-1}	β_0	1786.38	3372.65	2232.66	-4570.93	1664.86	974.06	3023.63	-14820.75
		(2.91***)	(3.57***)	(1.11)	(-0.61)	(2.35**)	(0.69)	(0.21)	(-1.69*)
WE	β_1	0.59	-0.06	0.47	-0.08	-0.28	0.39	0.61	0.25
		(3.533***)	(-0.21)	(2.56**)	(-0.22)	(0.91)	(1.09)	(2.31**)	(0.64)
ACC*AQ	$\beta_{1,ACC}$	0.04	0.01	-0.14	-0.17	0.01	0.02	0.14	0.14
		(0.37)	0.04	(-1.04)	(-0.68)	(0.03)	(0.16)	(0.89)	(0.80)
WE*ΔGDP	β_2	0.29	0.44	0.06	0.22	0.45	0.44	0.15	0.38
		(11.68***)	(7.12***)	(1.62)	(4.76***)	(8.40***)	(9.63***)	(1.76*)	(5.57***)
WE*MD	β_3	1.23	0.68	0.75	0.80	1.51	0.95	0.48	1.34
		(3.40***)	(2.73**)	(3.64***)	(1.25)	(4.12***)	(1.80*)	(1.02)	(3.22***)
ACC*AQ*MD	$\beta_{3,ACC}$	0.04	0.23	0.19	0.89	0.71	0.14	0.37	-.75
		(0.18)	(0.61)	(1.01)	(1.61)	(2.54**)	(0.41)	(1.14)	(-2.13**)
BV	β_4	0.79	0.98	0.94	0.83	0.83	1.02	0.64	0.97
		(8.27***)	(7.49***)	(7.17***)	(4.44***)	(7.40***)	(7.79***)	(5.93***)	(6.63***)
BV*MD	β_5	-0.08	0.10	0.01	-0.09	-0.08	0.08	0.27	-0.12
		(-1.03)	(1.26)	(0.14)	(-0.66)	(-1.17)	(0.64)	(3.19***)	(-1.18)
EX	β_6	73.78	56.72	237.34	246.30	426.10	128.17	212.30	14.28
		(3.37***)	(1.93*)	(5.42***)	(5.34***)	(6.50***)	(1.47)	(4.52***)	(2.27**)
constant	α	0.17	0.09	0.06	0.22	0.12	0.02	0.13	0.14
		(4.23***)	(1.83*)	(1.53)	(3.10***)	(2.07**)	(0.40)	(4.02***)	(3.02***)
No. of observations		10331	1747	1783	735	3319	629	670	877
No. of firms		1175	205	199	85	397	71	64	92
R2		45.37	45.49	61.49	53.41	40.61	54.04	52.88	49.96

Table 5 shows estimation results of equation 3(d). MV is defined as the market value of firm j in year t; BV is defined as the book value of firm j in year t; ACC is defined as the change in working capital in year t; EX is the excess return on investment, defined as: $CAPEX_{j,t}$*[($MTBV_{j,t}$-$IR_{j,t}$)/$IR_{j,t}$]; all variables are scaled by total assets at the end of fiscal year t; TA is defined as total assets of firm j at the end of fiscal year t; WE is defined as the product of Earnings and AQ; GDP is defined as annual GDP growth of country i of fiscal year t; MD is a dummy variable which takes the value of 1 if a firm adopts IFRS from 2005, and 0 otherwise. The sample comprises firm-year observations of seven countries in the EU between 1993 and 2011. We base the analysis on industry fixed firm and year effect regression. Robust t-statistics are in parentheses. *, **, and *** denote significance of coefficients at the 10 %, 5% and 1% level respectively, using a two tailed test.

Table 6.The Impact of Mandatory Adoption of IFRS on Alternative Measures of Earnings Quality

Panel A: Descriptive Statistics of Alternative Measures of Earnings Quality

	All		France		Germany		Sweden		UK		Netherland		Denmark		Switzerland	
Accounting Quality	AQK	AQH	AQK	AQH	AQK	AQH	AQK	AQH	AQK	AQH	AQK	AQH	AQK	AQH	AQK	AQH
Mean	0.9649	0.9625	0.9654	0.9624	0.9480	0.9482	0.9644	0.9635	0.9666	0.9672	0.9741	0.9574	0.9716	0.9595	0.9626	0.9599
Standard Deviation	0.0321	0..0389	0.0275	0.3425	0.0437	0.0398	0.0394	0.0337	0.0390	0.0459	0.0207	0.0395	0.0214	0.3377	0.0316	0.0286
Number of Observation	10332	10332	1747	1747	1783	1783	735	735	3319	3319	629	629	670	670	877	877

Panel B: The Impact of Mandatory Adoption of IFRS on Earnings Quality

$$AQK_{j,t} \; or \; AQH_{j,t} = \gamma + \delta MD_{j,t} \qquad (4)$$

	All		France		Germany		Sweden		UK		Netherland		Denmark		Switzerland	
	AQK	AQH	AQK	AQH	AQK	AQH	AQK	AQH	AQK	AQH	AQK	AQH	AQK	AQH	AQK	AQH
δ	0.0025	0.0032	0.0014	0.0040	0.0113	0.0040	0.0021	0.0002	0.0052	0.0018	0.0013	0.0065	(0.0023)	(0.0044)	0.0090	(0.0003)
	(3.79***)	(4.04***)	(1.08)	(2.44***)	(5.51***)	(2.14**)	(0.72	(0.06)	(3.51***)	(1.02)	(0.73)	(1.96*)	(-1.26)	(-1.50)	(4.09***)	(-0.17)
Number of observations	10332	10332	1747	1747	1783	1783	735	735	3319	3319	629	629	670	670	670	877

Panel A of Table 2 presents the descriptive statistics of alternative measures of earnings quality, which is defined by equation (1a) and (1b):

$$ACC_{j,t} = \theta_0 + \theta_1 TA_{j,t}^{-1} + \theta_2 \Delta Rev_{j,t} + \theta_3 PPE_{j,t} + \theta_4 ROA_{j,t} + \mu^k{}_{j,t} \qquad (1a)$$

$$ACC_{j,t} = \theta_0 + \theta_1 CFO_{j,t-1} + \theta_2 CFO_{j,t} + \theta_3 CFO_{j,t+1} + \theta_4 \Delta Rev_{j,t} + \theta_5 PPE_{j,t} + \theta_6 DCFO_{j,t} + \theta_7 CFO_{j,t} * DCFO_{j,t+}\mu^h{}_{j,t} \quad (1b)$$

$$AQK_{j,t} = 1 - \left|\mu^k{}_{j,t}\right| \qquad (2a) \quad AQH_{j,t} = 1 - \left|\mu^h{}_{j,t}\right| \qquad (2b)$$

$\mu^k{}_{j,t}$ is residuals estimated from equation (1a) and is $\mu^h{}_{j,t}$ residuals estimated from equation (1b) respectively. CFO is defined as cash flows from operations of firm j in year t; ACC is defined as the change in working capital in year t; ΔRev is defined as the change in total sales of firm j between year t-1 and t; PPE is defined as gross value of property, plant and equipment of firm j; all variables are scaled by total assets at the end of fiscal year t ; DCFO is defined as Dummy variable taking the value 1 if CFO is negative, and 0 otherwise; ROA is defined as Return on assets of firm j at the end of fiscal year t. Panel B of Table 2 reports the results of equation 4. Robust t-statistics are in parentheses. *, **, and *** denote significance of coefficients at the 10%, 5% and 1% level respectively, using a two tailed test.

Table 7. Valuation Model with Alternative Measures of Earnings Quality

Panel A-earnings adjusted by AQK

$$MV_{j,t} = \alpha + \beta_0 TA_{j,t}^{-1} + \beta_1 WE^k{}_{j,t} + \beta_2 WE^k{}_{j,t} * GDP_{j,t} + \beta_3 WE^k{}_{j,t} * MD_{j,t} + \beta_4 BV_{j,t} + \beta_5 BV_{j,t} * MD_{j,t} + \beta_6 EX_{j,t} + \varepsilon^k{}_{j,t}$$

	Coefficient	All	France	Germany	Sweden	UK	Netherland	Denmark	Switzerland
TA^{-1}	β_0	1946.55	3605.90	2086.99	-6217.50	1858.06	895.54	2951.08	-15313.71
		(3.02***)	(3.45***)	(1.09)	(-0.81	(2.57**)	(0.62)	(0.20)	(-1.84*)
WE^k	β_1	0.69	-0.07	0.46	-0.09	0.44	0.35	0.68	0.34
		(4.59***)	(-0.27)	(2.48**)	(-0.25)	(1.55)	(1.06)	(2.51***)	(0.85)
WE^k*ΔGDP	β_2	0.28	0.44	0.07	0.25	0.42	0.44	0.14	0.38
		(11.21***)	(7.24***)	(1.86*)	(5.66***)	(6.76***)	(10.18***)	(1.68*)	(5.53***)
WE^k*MD	β_3	1.18	0.70	0.83	1.24	1.48	1.04	0.69	0.99
		(4.08***)	(2.12**)	(4.33***)	(1.95)	(4.76***)	(2.15**)	(1.55)	(2.63***)
BV	β_4	0.78	0.99	0.96	0.87	0.82	1.02	0.63	0.93
		(7.60***)	(7.59***)	(7.10***)	(4.72***)	(6.57***)	(7.62***)	(6.18***)	(6.38***)
BV*MD	β_5	-0.08	0.02	-0.02	-0.16	-0.10	0.06	0.22	-0.04
		(-1.22)	(0.29)	(-0.41)	(-1.13)	(-1.63)	(0.54)	(2.91***)	(-0.47)
EX	β_6	72.87	57.83	237.89	233.65	425.09	128.37	207.69	14.45
		(3.33***)	(1.96*)	(5.43***)	(5.14***)	(6.57***)	(1.51)	(4.32***)	(2.02**)
Constant	α	0.17	0.08	0.06	0.20	0.11	0.02	0.13	0.15
		(3.89***)	(1.67*)	(1.64)	(3.03***)	(1.77*)	(0.38)	(3.85***)	(3.09***)
No. of observations		10332	1747	1784	735	3319	629	670	877
No. of firms		1175	205	199	85	397	71	64	92
R^2		45.09	45.76	61.82	53.45	39.20	54.25	52.98	50.16

Panel B-earnings adjusted by AQH

$$MV_{j,t} = \alpha + \beta_0 TA_{j,t}^{-1} + \beta_1 WE^h{}_{j,t} + \beta_2 WE^h{}_{j,t} * GDP_{j,t} + \beta_3 WE^h{}_{j,t} * MD_{j,t} + \beta_4 BV_{j,t} + \beta_5 BV_{j,t} * MD_{j,t} + \beta_6 EX_{j,t} + \varepsilon^h{}_{j,t}$$

	Coefficient	All	France	Germany	Sweden	UK	Netherland	Denmark	Switzerland
TA^{-1}	β_0	1892.23	3678.53	2278.76	-5515.91	1812.56	904.79	2734.22	-15246.09
		(3.31***)	(3.49***)	(1.15)	(-0.73)	(2.81***)	(0.64)	(0.19)	(-1.79*)
WE^h	β_1	0.62	-0.03	0.36	-0.09	0.32	0.38	0.67	0.28
		(4.16***)	(-0.13)	(2.13**)	(-0.26)	(1.17)	(1.16)	(2.57***)	(0.71)
WE^h*ΔGDP	β_2	0.29	0.44	0.06	0.24	0.45	0.45	0.15	0.38
		(11.95***)	(6.95***)	(1.60)	(5.36***)	(8.49***)	(9.96***)	(1.81*)	(5.49***)
WE^h*MD	β_3	1.24	0.66	0.87	1.09	1.70	1.04	0.81	1.00
		(4.41***)	(1.98**)	(4.68***)	(1.80**)	(4.93***)	(2.12**)	(1.73*)	(2.61***)
BV	β_4	0.80	0.99	0.96	0.86	0.84	1.02	0.64	0.94
		(8.14***)	(7.54***)	(7.08***)	(4.64***)	(7.58***)	(7.78***)	(6.21***)	(6.43***)
BV*MD	β_5	-0.09	0.02	-0.02	-0.15	-0.10	0.06	0.21	-0.04
		(-1.27)	(0.35)	(-0.35)	(-1.06)	(-1.59)	(0.54)	(2.80***)	(-0.45)
EX	β_6	73.40	56.55	239.77	236.25	423.41	127.31	207.14	14.95
		(3.36***)	(1.93*)	(5.39***)	(5.16***)	(6.63***)	(1.47)	(4.27***)	(2.11**)
Constant	α	0.16	0.08	0.06	0.21	0.10	0.02	0.13	0.15
		(3.98***)	(1.71*)	(1.63)	(3.04***)	(1.82*)	(0.40)	(3.91***)	(3.05***)
No. of observations		10332	1747	1784	735	3319	629	670	877
No. of firms		1175	205	199	85	397	71	64	92
R^2		45.47	45.51	61.43	53.12	40.84	54.12	53.07	49.61

Table 7 shows estimation results of equation 3 with alternative measures of accounting quality AQK and AQH, where Panel A lists the results with earnings adjusted by AQK and Panel B lists the results with earnings adjusted by AQH. MV is defined as the market value of firm j in year t; BV is defined as the book value of firm j in year t; EX is the excess return on investment, defined as: CAPEXj,t*[(MTBVj,t-IRj,t)/IRj,t]; all variables are scaled by total assets at the end of fiscal year t; TA is defined as total assets of firm j at the end of fiscal year t; WE is defined as the product of Earnings and AQ; GDP is defined as annual GDP growth of country i of fiscal year t; MD is a dummy variable which takes the value of 1 if a firm adopts IFRS from 2005, and 0 otherwise. The sample comprises firm-year observations of seven countries in the EU between 1993 and 2011. We base the analysis on industry fixed firm and year effect regression. Robust t-statistics are in parentheses. *, **, and *** denote significance of coefficients at the 10 %, 5% and 1% level respectively, using a two tailed test