International Earnings Comparability

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Abstract

We investigate the comparability of accounting earnings for 14 EU countries from the 1990s up to the mandatory introduction of International Financial Reporting Standards (IFRS) in 2005. Although previous international accounting studies (e.g., Joos and Lang, 1994; Burgstahler et al., 2006) document international differences in financial reporting properties, there is hardly no large-scale international evidence on the underlying fundamentals driving these differences. In the current paper, we elaborate on the intrinsic accruals – cash flow association as in Ball and Shivakumar (2005; 2006) and show that accruals measurement behavior is substantially affected by the overall business cycle stage, sector composition at the country level, and firm specific reporting incentives. More specifically, we show that incentives arising from the equity capital market, debt financing and labor markets fundamentally drive the within-country, firm-specific reporting behavior. In addition, our results suggest that the mandatory introduction of IFRS in 2005 did not instantly bring about the expected improvement in earnings comparability across Europe. Our results are robust to the inclusion of growth and sector effects as well as controls for a market-based proxy of economic losses. The current results provide valuable insights in the nature of earnings as a key performance measure and its comparative properties in an international setting.

1. Introduction

In this study, we investigate the determinants of international earnings comparability over time. Consistent with regulator views (e.g., Jenkins 1999) and prior academic research (e.g., Land & Lang 2002), we define reporting comparability as the ability of earnings to account similarly for alike transactions and differently for dissimilar transactions. Given the increased level of cross-border transactions over the last few decades and the historical differences in local Generally Accepted Accounting Principles (GAAP), improving comparability has become a major challenge for standard setters. It should therefore not come as a surprise that both the FASB and IASB put considerable emphasis on defining and implementing the concept of comparability in their latest joint Conceptual Framework: "[Comparability]…is a key characteristic of decision-useful financial information, as it would enable users to identify similarities in and differences between two sets of economic phenomena" (Crooch, 2006).

In our study, we posit that international earnings comparability assumes both transaction similarity and similarity in accounting practices as reflected in the accrual accounting system. Prior international accounting research has employed various metrics to examine cross-country differences in earnings characteristics: earnings multiples, accruals-cash flow associations and the degree of conservatism (Pope and Rees 1992; Joos and Lang 1994; Giner & Rees 2001; Land and Lang 2002). Similar to Ball and Shivakumar (2005; 2006), we focus on the accrual accounting system to investigate the association between accruals and positive, resp. negative cash flows across different countries. In addition, we study the sensitivity of this accruals – cash flow association to industry membership, business cycles, and firm-specific reporting incentives across each country. By doing so, we compare the way

accrual accounting functions equally (or, differently) across countries, which allows us to interpret the comparability of international earnings.

We choose a sample of European Union (EU) firms over a 15 year period prior and up to IFRS introduction (1991-2005) as our research setting for two important of reasons. First, since the implementation of the Single Market Program in 1992, the European economic environment became considerably more similar due to the abolishment of economic and protectionist barriers. Since then, macro-economic policies (such as currency units, interest rates and fiscal policies) are set by the EU Commission instead of at the country level, resulting in more integrated Member countries economies. Moreover, cross-border competition in Europe has increased considerably since the early 90s (Adjaouté and Danthine, 2004).[1] As a result of this increased cross-border competition and more integrated economies since the early 90s , we expect to observe greater incentives for more comparable financial reporting.

Second, in addition to the economic integration, Europe also is the first large-scale conduct test of a radical mandatory switch of national, country-specific accounting standards towards uniform International Financial Reporting Standards (IFRS). Despite the early 1980s initiatives to harmonize accounting policies across Europe with the 4th and 7th Directive, national GAAPs still continued to vary across countries (Joos and Lang, 1994). Street (2002) shows that these differences – although reduced – still persist in national EU regulations for more recent years. With the implementation and planned anticipation of IFRS, however, the accruals measurement system becomes uniform across all Member countries, which in turn

[1] More simultaneous business cycles and cross-border competition threats suggests that industry classifications at the supranational level have become more important than pure country barriers, especially for EU countries (Baele and Inghelbrecht, 2006).

substantially reduces country-specific variations in accruals measurement flexibility. We therefore expect to find more similar accruals – cash flow associations across countries over time. However, remaining differences in reporting incentives across countries (despite the economic integration efforts) might diminish the increase in earnings comparability. [2]

To empirically investigate the role of reporting incentives in explaining cross-country differences in the accruals - cash flow (*henceforth*: CFO) relation, we extend the piecewise linear regression model developed by Ball and Shivakumar (2005; 2006) separating positive and negative cash flow observations. We include sector characteristics and reporting incentives related to (*i*) capital market pressure, (*ii*) debt levels, and (*iii*) labor relation incentives.[3] As suggested by Kirschenheiter and Melumad (2002), capital market pressure could induce an accrual reporting behavior where smoothing and big bath accounting co-exist. However, Dechow and Skinner (2000) interpret capital market pressure as increased managers' sensitivity to stock price volatility, which could explain opposite expectations of timely gain and untimely loss recognition. The incidence of high debt levels will likely result in an increased demand for more timely loss recognition, especially in recent years when EU lending activity has internationalized significantly and creditors have become more active monitors (Degeorge and Maug, 2006). Finally, labor pressure in Europe is an important feature of EU social democracies, far more than it has been in a typical US setting (Roe, 2003). We conjecture that labor pressure encourages smoothing of positive cash flow as well

[2] This result would be in line with recent anecdotal evidence suggesting that differences in financial reporting persist after the 2005 mandatory IFRS introduction (Ernst & Young 2006). Based on a limited sample of the 100 largest EU non-financial firms, an Ernst and Young (2006) research memorandum concludes that financial statements of a French retailer, for example, look and feel more similar to those of a French manufacturer than to those of a Dutch or UK retailer.

[3] Note that Ball and Shivakumar (2005) include size, leverage and industry controls in their regression model to control for differences in the "*exogenous volatility in economic income*" (p. 110) although their main focus of analysis is on the separation between public and private UK firms. Part of our analyses, however, rely on incentive effects proxied for by size, leverage and labor pressure as sizeable firm-level incentives that do not simply capture exogenous volatility in economic income.

as timely loss recognition as this reduces profit arguments in collective wage bargaining or lay-off decisions (Liberty and Zimmerman, 1986). In addition, we partition our observation period according to business cycle regimes as suggested by Ryan (2007) to study the differential impact of reporting behavior across economic recessions and expansions.

We find considerable differences in accrual measurement across the 14 EU countries over the period 1991-2005. Positive cash flows are offset for 72% by income decreasing accruals (i.e., smoothing) in the early 1990s while for 62% after 2000. Smoothing of positive cash flows seems to be a general feature across Europe, but with greater differences across countries in later periods. In the early 1990s, most countries (except for Denmark, Ireland and UK) do not seem to have an asymmetry between the recognition of losses and gains, as measured by negative respectively positive cash flows. More countries, however, exhibit timely loss recognition in more recent years; a finding consistent with a greater degree of earnings conservatism and therefore higher earnings quality. However, persistent smoothing of losses characterizes reporting practice in Greece and Portugal. Excluding these two countries from the analysis reveals a more comparable and more timely loss recognition across the EU. These findings suggest lower earnings comparability across the EU in more recent years when positive cash flow firms are involved and greater comparability when negative cash flow firms are involved.

Next, we investigate how reporting incentives affect accrual measurement and whether the incentive effects differ across the EU over the period 1991-2005. We show that capital market pressure is associated with less smoothing in positive CFO years and less timely loss recognition in negative CFO years, and especially so for France, Germany and the UK. This is evidence consistent with the capital market pressure hypothesis as in Dechow and Skinner (2000). Further, we show that firms with high debt levels smooth positive CFO more across

all periods and recognize losses more timely, but mainly so in the 2001-03 recession period. This finding is in line with an increased demand for more conservative reporting, especially during economic recession periods. In addition, we find that labor pressure is positively associated with smoothing of positive profits and more timely loss recognition, also mainly in the 2001-03 recession periods. This finding confirms our expectations that for EU countries, labor pressure is an imperative determinant of reporting behavior and that labor-intensive firms try reducing the impact of collective wage bargaining by keeping reported profits as low as possible (Liberty and Zimmerman, 1986). Finally, these combined results also suggest that although incentive effects vary over time and across countries, they do not disappear as from 2005 (i.e., the mandatory IFRS adoption year).

We check the robustness of our results with respect to controls for sector specification, growth characteristics as well as for including market returns in our piece-wise regression model. Although sector separation explains some variation in international accruals measurement, it is not responsible for the observed accruals – CFO evolution across countries over time. In line with Dechow et al. (1998), we identify firm-specific growth characteristics as a more important factor of differences in international earnings comparability. Finally, we find that the book-based accruals – CFO association is not significantly altered by including a market-based proxy for economic gains and losses.

In sum, our results suggest that in an international context, economy-wide fundamentals together with industry-specific factors as well as firm-specific incentives and intrinsic firm growth jointly impact the properties of accounting earnings. We find this patterns both for the periods before as well as after the mandatory introduction of IFRS. We take away from these findings that incentive effects might continue playing a dominant role in accruals measurement, even after introducing one common set of accounting standards. This finding is

in line with earlier findings as in Ball et al. (2003) and suggests that a mere switch to a common set of accounting standards (IFRS) is not necessarily sufficient to bring about the anticipated improvement in earnings quality or would enhance earnings comparability within Europe.

Our study provides a number of insights for the international accounting literature. *First*, we show that international convergence at the macro-level as well as political harmonization efforts lead to increased international earnings comparability patterns, despite the application of different accounting standards at the country-level. *Second*, we show that firm-specific incentives related to capital and debt markets as well as labor pressure at the country level are important determinants of the observed variation in international earnings. In addition, our findings suggest that incentive effects continue to determine variations in accruals measurement, even after the mandatory implementation of IFRS. This suggests that a mandated switch to one common set of accounting standards are not necessarily sufficient *per se* to bring about a cohesive improvement in international earnings comparability.

The remainder of the paper is organized as follows. In the second section, we describe the European environment, summarize the most important economic and political changes and build on these features and the related literature to build our hypotheses. Section 3 describes the data and sample composition and provides descriptive statistics on our sample. In section 4, we present our empirical findings and we provide additional tests in Section 5. In the final section, we summarize and conclude the study.

2. The European context

During the second half of the 20th century, the macro economic environment in Europe experienced a dramatic transformation, as many attempts were set up to economically and politically unite several countries into a single European Union (EU). One of the milestones in this unification process was the establishment of a Single Market Program in 1992, outlined in the *Maastricht Treaty*, which allowed free goods and services trades throughout the EU member states. This important deregulation of product, services and labor markets significantly promoted trade between firms from different EU member states (Adjaouté and Danthinne, 2004). Moreover, the *Maastricht Treaty* also set the goals for establishing a common monetary policy monitored by a Central European Bank, introducing a single currency (the Euro) for all Member States, and aligning fiscal policies based on a common discipline.

This process of economic and political integration is unique from a global perspective and has been the subject of a rich literature in many economic disciplines like finance, industrial economics and accounting. At the level of financial markets, Bekaert et al. (2007) report a significant upward trend in stock return correlations across Europe since the early 1990s, consistent with progressively more integrated EU financial markets. Other studies (e.g., Baele and Inghelbrecht, 2006) demonstrate that structural factors like trade openness or the introduction of a single currency significantly reduce country-specific volatility in stock returns.

Industrial economics studies examine this EU economic environment with respect to industry and market competition. Geroski and Gugler (2004) document that despite the EU economic integration in the 1990s, national EU market structures still exhibit dissimilar market-size structures. Consistent with these findings, Goddard et al. (2005) provide in a four-country EU

study (Belgium, France, Italy and the UK) evidence of persistent excess profitability realizations over the period 1993-2001, despite the existence of the Single Market Program.

In international accounting studies, the EU context and its economic integration process has also lend itself to various studies. In an early study, Joos and Lang (1994) show that cross-country accounting measurement practices affect the comparability of international financial ratios in the period 1985-1992. Land and Lang (2002), however, document convergence trends in earnings-to-price multiples in a more recent period (1994-1999) across 7 major jurisdictions worldwide, amongst which three are EU countries: France, Germany and the UK. Other studies (e.g., Giner and Rees, 2001; Raonic et al., 2005) show that conditional accounting conservatism varies substantially across EU countries and is likely affected by reporting incentives such as legal environment and capital markets importance. In a more recent study, Burgstahler et al. (2006) document that legal environment also dominates earnings management relations at the country level.

Despite conflicting views on EU convergence and economic integration effectiveness across and even within different research domains, general macro-economic and institutional statistics do provide evidence in line with integrating EU economies during the past 15 to 20 years. Figure 1 summarizes a number of macro-economic and institutional dispersion rate evolutions across 14 EU countries from the early 1990s until 2005. We calculate dispersion in inflation rates, Gross Domestic Product per capita and unemployment rates as macro-indicators and dispersion in stock market capitalization per capita, average debt to equity levels and the proportion of foreign sales to total sales as institutional variables[4]. For all but one dispersion evolution (GDP/capita), we observe a clear pattern of less dispersion when

[4] Dispersion is defined as the average deflated standard deviation of the variable of interest across all 14 EU Member States.

time moves on. Decreasing dispersion trends are most pronounced for inflation rates (from 72 to 39 per cent), market capitalization importance (from 71 to 40 per cent) and relative international sales (from 68 to 32 per cent).

INSERT FIGURE 1 ABOUT HERE

This EU setting where market entry barriers and trade regulations have been reduced substantially, provide a unique setting to study patterns in international earnings comparability. Moreover, the context is unique in that accounting principles differed substantially at the time of the introduction of the Single Market Program and that significant attempts have been made to standardize this reporting in more recent periods. So unlike previous studies (e.g., Givoly and Hayn, 2000; Darrough and Ye, 2007) that examine differences in accounting profitability in one institutional setting (the US), we use the European setting to provide a more comprehensive picture of a variety of fundamentals driving profitability patterns.

3. Sample and Data

We use financial statement data from the Thomson Worldscope database for the period 1990-2005. The initial sample consists of all non-financial companies incorporated in one of the 15 EU Member states (i.e., the EU Member countries as before May 2004), and having a primary listing in their respective home country. We exclude Luxembourg because of insufficient firm-year observations. We also exclude firm-year observations with missing

Industry Classification Codes (ICB), with a fiscal year exceeding 12 months, or with missing data on total assets (*WC02999*), earnings (*WC01706*), or on accruals components.

Consistent with recent studies in international finance (Baele and Inghelbrecht, 2006; Bekaert et al., 2007) we use the Industry Classification Benchmark (ICB) sector codes, also known as the FTSE Actuaries Classification System to identify industry membership. This industry classification benchmark outperforms a typical SIC-classification when studying non-US stocks (Bekaert et al., 2007) by classifying individual firms in a vast range of 39 homogeneous industries. We exclude the 7 financial sectors from our sample resulting in a final sector classification of 32 non-financial sectors (See Appendix 1 for more details).

We conduct the analyses over 4 different periods, each reflecting distinct macro-economic shocks: 1991-1993 (period 1) refers to the early EU integration period and was a recession period; 1997-1999 (period 2) by contrast was characterized by booming market conditions (expansion), whereas 2001-2003 (period 3) is again identified as a recession period (*CEPR Statistics*; See Figure 3).[5] Finally, the 2005 observations again are from an expansion period and have the unique feature that all reported earnings are in accordance with one unique international standard, namely IFRS.

Controlling for business cycles acknowledges recent concerns that accounting figures – and especially losses – are potentially related to the business cycle (see e.g. Klein and Marquardt, 2006; Ryan, 2007). Klein and Marquardt show that the propensity of accounting losses is positively related to economic recessions. Khurana et al. (2006) document that asymmetric

[5] Note that CEPR (Center for Economic Policy Research) is the European equivalent of the US NBER (National Bureau for Economic Research). CEPR provides monthly indicators of the EU area business cycle on a consistent basis since the late 1980s. More information on the CEPR and the recession – expansion indicator can be found in Figure 3.

timely loss recognition declines during periods when the economy is in a relatively strong state, consistent with the hypothesis that the more adverse investor response to earnings disappointments during good times creates an incentive for managers to lower the asymmetric timeliness.

We include the 2005 observations as a separate period to examine the effect of a mandatory accounting standards switch on international earnings comparability. As from January 1 2005, EU listed firms are required to report consolidated financial statement in accordance with IFRS (International Financial Reporting Standards).[6] Whereas *pre-2005* earnings are potentially still differently affected by variations in local GAAP prescriptions defined at the country level, 2005 IFRS figures should not be biased as such if all countries apply the standards in a similar and consistent way.

Earnings are decomposed into accruals and cash from operation. Following Dechow et al. (1995) and Leuz et al. (2003), we compute accruals as: *(ΔCA - ΔCASH) - (ΔCL - ΔSTDEBT) – DEPR*, where *ΔCA* is the change in current assets (*WC02201*) from year *t* to *t-1*, *ΔCASH* is the change in cash (*WC02001*), *ΔCL* is the change in current liabilities (*WC03101*), *ΔSTDEBT* is the change in short term debt (*WC03051*), and *DEPR* is the annual depreciation, depletion and amortization expense in year *t* (*WC01151*). Deducting accruals from earnings provides us with an operating cash flow measure (hereafter *CFO*). To allow for direct firm size comparisons, we deflate earnings, cash from operations and accruals by total assets. Our

[6] As from January 1, 2005 the mandatory adoption of IFRS became effective for the majority of EU listed firms. UK firms listed on the Alternative Investment Market (AIM) are, however, able to postpone the adoption of IFRS with two more years until the fiscal year 2007. Further exceptions exist and typically include firms currently already reporting reconciliated figures under US GAAP (i.e. EU-based firms with cross-listings in the US).

final sample consists of 25,110 observations across the 4 periods, covering 14 countries and 32 non-financial ICB sectors.

INSERT TABLE 1 ABOUT HERE

In Table 1, we present the mean, median and standard deviation of 7 variables of interest: i.e. (*i*) the 3 key variables (earnings, cash from operations and accruals), (*ii*) 3 reporting incentives (market capitalization, financial leverage, and labor intensity) , and (*iii*) the high-tech indicator variable. The reporting incentives are our main variables used in the multivariate section of the analyses and high tech is an our dichotomous sector control. The firm-year observations correspond with these used in the regression analysis reported in Table 4. Outliers have been deleted by applying a multivariate deletion rule where the top and bottom 1 per cent of observations are not included in the regression (see Table 4).[7]

Earnings seem to follow the business cycle pattern, with a negative average value of 3.1% in the recession of 2001-03. This earnings pattern is different from the steady decline documented for the US by Givoly and Hayn (2000, p.296), in Darrough and Ye (2007, p. 36), and Klein and Marquardt (2006, p. 185). Givoly and Hayn attribute the decline in earnings to an increased conservatism whereas Darrough and Ye explain this pattern by the increasing profitability gap between large and small lists. Klein and Marquardt provide evidence that the declining average profitability is also related to underlying economic performance (as measured by CFO).

[7] Results are unaffected if we reset this outlier detection rule to 0.5 and 2 per cent.

An eye-catching trend in Table 1 is the steady increase in the standard deviation of earnings in the first three periods followed by a decline in 2005. This increase in earnings variability until the early 2000s is in line with an increasing CFO variability but stands in contrast with accruals patterns that remained far more stable over time. Comparing the mean and median values of earnings and CFO show that these distributions are heavily skewed, especially in the 2001-2003 recession period where extreme negative earnings and CFO bias the mean values downward.

As described above, we have 32 non-financial sectors included in the sample. Consistent with Hayn (1995) and Hand (2005) we find in unreported analyses (available upon request) that high-tech firms follow systematically different earnings patterns than low-tech industries across these 32 sectors. We therefore report the evolution of high-tech across the 4 periods in Table 1. A firm is considered to be high-tech (a dummy variable equal to 1 if the firm belongs to a high-tech industry and zero otherwise) if it belongs to one of the following 6 ICB sectors: Aerospace & Defense (#271), Pharma & Biotech (#457), Fixed Line Telecom (#653), Mobile Telecom (#657), Software & Computer Services (#953), Technology Hardware & Equipment (#957). Table 1 shows an increase in high-tech firms from 7.5% in 1991-93 to 22.5% in 2005, mainly driven by an increase in Software and Computer Services firms.

Patterns in earnings and properties of the earnings components will be related to firm-specific reporting incentive variables in the multivariate analyses. We therefore provide additional descriptive statistics on market capitalization (*SIZE*), financial leverage (*measured as long term debt as a proportion of total assets*) and labor intensity (*measured as number of*

employees per million EURO market capitalization) over time.[8] The average firm size follows the general business cycle trends with largest values in period 2 (1997-1999) and 2005. Financial leverage is fairly stable over time around 20 per cent of total assets. Finally, firms become increasingly less labor intensive over time; a finding consistent with the increasing importance of high-tech, knowledge-based though less labor intensive firms.

INSERT TABLE 2 ABOUT HERE

Next to the pooled sample descriptive statistics, we report in Table 2 the country specific averages of the 7 variables discussed above. Average earnings levels not only vary substantially across time, but also across countries. The relative levels of earnings for France, Germany and the UK are consistent with earlier findings by Joos and Lang (1994) for the 1980s. German firms consistently have low levels of earnings. UK earnings are larger than these of France and Germany, but only until 2000 when average earnings drop to similar levels as Germany in the period 2001-2003.

Further, Swedish firms record the largest losses in the 2001-03 recession period, and relatively low earnings levels in the first and last period. The substantial accounting losses in Sweden are generated through negative cash flows and instantaneous negative accruals. In contrast, Greek firms exhibit a relatively low level of negative accruals and positive cash

[8] We choose to scale the number of employees by total market value as our estimate for labor intensity. Alternatively, one could choose to scale by total assets or sales. Although neither market value nor assets or sales are an optimal scaler, we decide to opt for market value since this value contains both realized and discounted unrealized growth opportunities which are not necessarily reflected in sales or total assets. We give the example of a biotech firm having virtually no or very low sales (respectively, assets) to illustrate that with sales or total assets as denominator, some firms could be ranked as being very labor intensive simply because of their small denominator value.

flows, resulting in relatively stable earnings over time. In general, these results for Greece do not follow the same trend as in the other European countries (especially in 2001-03).

Further, more than 8% of the early 1990s listed firms in Denmark (9.3%), Finland (12.9%), France (9.4%), Italy (8.5%) and the Netherlands (8.9%) are high-tech firms. Other countries like Austria and Portugal did not have any high-tech firms in the early observation period. By 2005, however, all EU countries have more than 10% high tech firms, with Finland (28.7%), Germany (29.3%) and Sweden (33.7%) having around 30% of their firms in the high-tech sectors.

The average market capitalization varies substantially across the EU in all 4 periods. The average listed firm significantly grows over time, especially so in Portugal (by 16.5 times), Ireland (by 8.5 times) and Austria (by 5.8 times) from period 1 to period 4.[9] Financial leverage is increasing in Greece (from 0.22 to 0.32) and Portugal (from 0.26 to 0.41), and significantly decreasing in Sweden (from 0.31 to 0.17) and Finland (from 0.45 to 0.26). The trend in leverage is inversely related with the trend in high-tech firms in these two Scandinavian countries, consistent with high-tech firms relying more on equity financing. Labor intensity is significantly decreasing over time, except in Greece (from 15.7 to 12.7 employees as per million Euro market cap) and to a lesser extent in Germany (from 24.0 to 16.4 employees as per million Euro market cap). Sweden has the most spectacular decrease in labor intensity from 41.6 to 7.5. Labor intensity varies between 15.7 (Greece) and 44.2 (France) in 1991-93 and between 6.2 (Spain) and 16.9 (France) in 2005.

[9] One should be cautious when interpreting the market capitalization trends, since the distributions are heavily skewed and the reported averages are affected by a few extremely large firms. Note already that the presence of these extremes do not affect or contaminate further test results as we will use the standardized (0,1) rank of market capitalization, financial leverage and labor intensity in our multivariate tests.

4. Data Analyses

4.1. Identification of Common Sources of Earnings Variability

In a first analysis, we investigate the sources of earnings variability within Europe. Consistent with the industrial economics literature, we use a variance decomposition model to disentangle common sources of variation in earnings (Schmalensee 1985; McGahan and Porter 1997). In Table 3, we document two alternative specifications of the variance component model, both originating from the following full model:

$$\sigma^2_{Earnings} = \sigma^2_{year} + \sigma^2_{firm} + \sigma^2_{ind} + \sigma^2_{country} + \sigma^2_{ind,year} + \sigma^2_{country,year} + \sigma^2_{size} + \sigma^2_{error} \quad (1)$$

where $\sigma^2_{Earnings}$ refers to the variance in earnings (across all firm-years). The variance is a linear combination of variance components resulting from (1) stable or time-invariant year, firm, industry and country effects, (2) transient industry-year and country-year effects, (3) relative firm size, and (4) an unexplained error component. The inclusion of stable and transient firm, industry and country effects are motivated by the descriptive statistics showing substantial variation in earnings across these three levels over time[10]. The size control (measured as the firm-year quintile rank of a firm's market capitalization), is motivated by recent findings of Darrough and Ye (2007), identifying size differences as an important determinant of firm profitability. We use the VARCOMP procedure in SAS software to estimate the different variance components.

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[10] Since we have only one year of data on each firm, firm-specific effects are not interacted with year in the VARCOMP analysis. Instead, the transient firm effect is captured by the year variable. In untabulated analyses, we also ran other specifications of the full model, e.g. without interaction effects.

INSERT TABLE 3 ABOUT HERE

Table 3 shows the full model results (model 1) together with a more restricted model in which specific variances are set to zero to allow for direct comparison with results reported earlier in Hawawini et al. (2003) (last line in Table 3).[11]

Stable firm-effects account for 17.5 percent in the full model specification (model 1), while it is still 22.9 percent in the reduced model (model 2). Our estimated firm-effect is substantially smaller than the firm-effect of the US benchmark model (22.9 percent in model (2) versus 35.8 percent in the US), consistent with a more substantial change in the European competitive environment over time and firm profitability levels to be less persistent.

Year effects capture the impact of economy-wide factors over time and explain between 3.9 percent and 4.5 percent of variance in earnings across the different models. The year effects are on average four to five times larger than those reported by Hawawini et al. (2003) for the US market. This substantial year effect is consistent with the descriptive statistics in Table 1, showing not only decreasing average earnings levels but also substantially higher dispersion in more recent observation years. This finding is also consistent with disappearing national economic and political barriers in the EU, a process that started in the early 1990s and resulted in higher competition levels and greater earnings variability over time.

Stable industry effects are about three to four times smaller than stable firm effects and explain between around 5.0 percent of the earnings variance, being somewhat smaller than

[11] Hawawini et al. (2003) extend earlier US-based studies of Schmalensee (1985), Rumelt (1991) and McGahan and Porter (1997) and report year, firm, industry and industry-year interaction effects, and is therefore best suited as a benchmark model. Their sample period runs from 1991 till 2000.

the US benchmark (8.1 percent). However, transient industry effects (measured by industry-year interactions) explain about 10 percent of the earnings variance, being more than three times higher compared to the US (3.1 percent). Moreover, from untabulated analyses (available upon request), we conclude that allowing for these transient industry effects results in an important reduction of the unexplained component (i.e. from 67 percent in a firm-year-industry model to 57 percent in model 2). The importance of transient industry effects is consistent with the increased competition level in many European industries between 1990 and 2005, yielding a substantial variation in earnings within specific industries from one year to another.

Additionally to the Hawawini et al. (2003) study, we introduce country and size effects. Adding stable country effects explains only about 1 percent of the explainable fraction of earnings variance. By contrast, transient country effects (i.e., country-year interactions) explain 3.1 percent of earnings variance, also suggesting altering profitability patterns at the country level over time. Finally, size explains 10.6 percent of earnings variance. Overall, the story that emerges from the earnings variance decomposition analysis is consistent with the idea that the 14 EU countries experienced disappearing economic barriers since the early 1990s resulting in increased levels of competition. Earnings variability can partly be explained by country differences and industry-effects (where the industry effect is three to four times larger than country effects).

4.2. Longitudinal industry and country effects in earnings

To examine the transient effect of industry versus country on earnings variation in more detail over our 15-year period, we rerun the VARCOMP analysis from the previous section

on a yearly basis with only industry and country as explanatory factors. Results are reported in Figure 3, where we plot the percentage of earnings variance that can be attributed to industry and country variations[12]. In the VARCOMP analysis, a large percentage of explained variation is a reflection of large between-industry (resp. between-country) variation.

INSERT FIGURE 3 ABOUT HERE

From Figure 3, we discern two distinct periods: period 1 from 1991 till 1997, and period 2 from 1997 onwards. In the first period, country effects largely dominate industry effects with the industry effect being relatively low and constant in the early 1990s. This suggests that between-country variation is larger than between-industry variation. In the second period, the industry effect increases considerably beyond the variance explained by country. In 2001, industry effects explain even more than 20 per cent of earnings variability but then sharply falls back to a level between 5 and 8 per cent in 2004–05. Apparently, differences between industries become increasingly important in the second period. Note also that during the period 2001–03, both industry and country effects explain an increasing part of earnings variability. This suggests that specific industries and countries suffer more from the recession than others.

Both the country and industry pattern observed in Figure 3 are consistent with the economics' integration literature (e.g. Adjaouté and Danthine, 2004). In the first period, country borders are still imperative frontiers, making companies primarily to focus on their national markets.

[12] To correct for a potential bias in our sample due to the high number of UK observations, we also perform this analysis on a reduced non-UK sample. Results are consistent and very similar to those reported above.

When these economic and financial barriers are abolished, firms increasingly compete with foreign companies, resulting in less between-country variation and more economic integration within Europe.

However, since we apply an accounting metric to capture similarities and discrepancies in firm performance, the above results might also be explained by accounting harmonization efforts. During our sample period, several initiatives were taken to reduce accounting differences within Europe (e.g. following the EU directives of 1983, and more recently, the development and mandatory application of International Financial Reporting Standards by 2005). To the extent these efforts have been effective (and incorporated or anticipated in national accounting rules), earnings measurement in the second period should likely be more comparable across countries and within industries. In the next section, we further decompose earnings into its accruals and cash flows (CFO) component to get more insight into the underlying fundamentals of international earnings comparability.

4.3 Accruals–Cash Flow Relations, Asymmetric Timeliness of Loss Recognition and Business Cycle Stages

In this section, we investigate the evolution of the asymmetric relation between accruals and positive (resp. negative) cash flows over a 15 year period across 14 EU countries. By doing so, we highlight the (potentially) changing role of accrual accounting in performance (earnings) measurement over time across the EU countries. More specifically, Dechow et al. (1998) argue that accruals mitigate noise in operating cash flow, and therefore exhibit a negative correlation with operating cash flow. Ball and Shivakumar (2005; 2006) discuss a second role of accrual accounting, which is the timely recognition of gains and losses. They show that a more timely recognition of economic gains or losses induces a positive

correlation between accruals and cash flows. The more conservative an accounting system is, the greater the timeliness of loss recognition versus gains recognition and the greater the degree of asymmetry. The model we apply here is an extension of the piecewise linear accruals-cash flow model developed by Ball and Shivakumar (2005):

$$ACC_t = \alpha_0 + \sum_{i=1}^{14} \alpha_{1,i} DPCFO_t + \sum_{i=1}^{14} \alpha_{2,i} DNCFO_t + \sum_{i=1}^{14} \beta_{1,i} DPCFO_t \times CFO_t + \sum_{i=1}^{14} \beta_{2,i} DNCFO_t \times CFO_t + \varepsilon_t \quad (2)$$

Where *ACC* is equal to total accruals, *CFO* are operating cash flows, *DPCFO* (*DNCFO*) is a dummy variable equal to one if cash flow is positive (resp. negative) and *DPCFOxCFO* (*DNCFOxCFO*) is equal to the interaction between the dummy variables and the cash flow values.

The coefficients in the regression model can vary across the 14 EU countries. The coefficient β_1 provides a country-specific partial correlation coefficient of the ACC - CFO association provided that cash flows are positive. The coefficient on β_2 then represents the country-specific accruals–cash flow partial correlation coefficient for negative cash flow years. Asymmetry between loss and gain recognition in the model results in a β_1 coefficient that is more negative than the β_2 coefficient. Similar to the analyses in Table 1 and 2, we separately estimate regression model (2) for the four sub-periods as defined above (1991-1993 [1]; 1997-1999 [2]; 2001-2003 [3]; 2005 [4]) to control for business cycle effects.

INSERT TABLE 4 ABOUT HERE

Results in Table 4 show that across all observation periods, the accruals–cash coefficient is on average more negative for positive (β_1) than for negative cash flow (β_2) firm-years. However, whereas the difference is relatively small in the first period (1991-1993: –71.8 for positive CFO versus –56.8 for negative CFO), this difference substantially increases for 2001-03 recession years (–61.9 for positive CFO versus –5.8 for negative CFO), consistent with greater asymmetry in gain/loss recognition over time. The greater asymmetry in more recent years is caused by a significant increase in timely loss recognition in recent years versus a moderate increase in timely gains recognition. Portugal and Greece are the exceptions and show no difference in accruals-cash flow relation between positive and negative cash flows. These findings of increasing loss recognition asymmetry over time are consistent with an increase in earnings quality between 1990 and 2005. Land and Lang (2002) also find accruals-cash flow correlations to become less negative in the period 1987 and 1999 and interpret this result as evidence of less earnings smoothing. However, our piece-wise linear model emphasizes the importance of separating out negative versus positive CFO in the accruals-CFO relation. Below we further explore the role of business cycles and reporting incentives as drivers of the accruals – CFO association.

We observe substantial country differences in the β_1 coefficient (ACC-positive CFO relation) in all periods, and country differences increase over time as the standard deviation of the country coefficients monotonically increase from 7.7% in period [1] to 19.6% in 2005 (IFRS year). We further investigate country differences across business cycles. In period 1991-93 (a recession period), Ireland (-54.2) and the UK (-64.9) exhibit the least negative correlation for positive CFO, consistent with earlier research findings showing lower earnings smoothing and therefore higher earnings quality compared to continental European firms (e.g., Joos and Lang, 1993). Countries such as Belgium, Finland, Sweden and Spain start showing a less negative β_1 coefficient in the period 1997-99 (expansion). Further, we find that Germany

keeps a highly negative accruals - CFO correlation coefficient β_1 in all four periods. This might come as a surprise, given that many German firms are early IFRS adopting firms but confirm earlier results as in Van Tendeloo and Vanstraelen (2005).

The differences in the β_2 country coefficients (accruals-negative CFO relation) are high and fairly stable in all periods ($std_{[1]}$ = 42.8% versus $std_{[4]}$ = 39.1%). In the first recession period (1991-93), Ireland (25.6), the UK (2.1) and Denmark (10.3) have a positive accrual-negative CFO relation, indicating a timely recognition of economic losses. The other EU countries exhibit similar smoothing behavior as in the case of positive CFO-accruals correlation, i.e. a negative β_2. Starting from the second period (1997-99), negative cash flows are much less compensated by income increasing accruals in France, Germany, Ireland, Sweden and the UK. Again, Greece and Portugal are noticeable exceptions having significantly negative β_2 coefficients in all periods. All other EU countries, however, exhibit more timely loss recognition in more recent periods compared to the early 90s. Further, we find that for 2005 (expansion period *and* the first year of mandatory IFRS adoption), β_2 coefficients on average become more negative again.[13] We interpret this as evidence consistent with increasing timeliness of loss recognition in economic downturn periods, irrespective of applying one single set of accounting standards (IFRS).

This finding highlights the role of business cycles in understanding how accruals work. In economic recessions, the correlation between current and future negative cash flows might be stronger than in non-recession or expansion periods. If economic losses are reflected in decreasing future cash flows, then current negative cash flow is likely to be positively

[13] Note that coefficients for negative 2005 CFO observations cannot be estimated for Austria, Belgium, Finland, Ireland and Spain because of a lack of sufficient (minimum 7) data to run our regression. We require at least 7 observations per country to estimate our regression model. Changing the required number of observations to 10 does not alter the general results but does leave out 3 more countries (Denmark (8), Netherlands (8) and Portugal (10)).

correlated with future cash flows. To the extent the reduction in future cash flows are accrued as a component of current period earnings (for example by an impairment charge), current cash flows are positively correlated with accruals (Ball and Shivakumar, 2005).

Combined, these results show that economic losses are recognized differently across business periods and that EU firms recognize losses more timely in the more recent recession period as opposed to the early 1990s recession years. However, on top of the more timely loss recognition in more recent years, the substantial variation at the country level raises questions about innate within-country differences potentially gearing these cross-country differences. Most earlier international accounting studies typically use country-level static variables related to rules of law and corporate governance to model country differences in earnings properties (Ball et al., 2000; Leuz et al., 2003; Burgstahler et al., 2006). However, we argue that the intrinsic firm incentives within one country are potential key drivers of the observed reporting properties at the country level. We elaborate on these incentives in the next section.

4.4 Reporting Incentives, Accruals–Cash Flows Relations and Asymmetric Timeliness of Loss Recognition

In this section, we investigate the role of within-country reporting incentives to explain the accruals-cash flow relation. We do so by including separate *incentive* variables in model (2):

$$\begin{aligned} ACC_t = {} & \alpha_0 + \sum_{i=1}^{14} \alpha_{1,i} DPCFO_t + \sum_{i=1}^{14} \alpha_{2,i} DNCFO_t \\ & + \sum_{i=1}^{14} \beta_{1,i} DPCFO_t \times CFO_t + \sum_{i=1}^{14} \beta_{2,i} DNCFO_t \times CFO_t \\ & + \sum_{i=1}^{14} \gamma_{1,i} DPCFO_t \times INCENTV_t + \sum_{i=1}^{14} \gamma_{2,i} DNCFO_t \times INCENTV_t \\ & + \sum_{i=1}^{14} \delta_{1,i} DPCFO_t \times CFO_t \times INCENTV_t + \sum_{i=1}^{14} \delta_{2,i} DNCFO_t \times CFO_t \times INCENTV_t + \varepsilon_t \end{aligned} \quad (3)$$

where *DPCFO* and *DNCFO* are dummy variables equal to 1 if CFO is positive (resp. negative), and *INCENTV* is a variable indicating the reporting incentive.

Our first incentive variable (*SIZE*) controls for a firm's capital market pressure and is measured as the within-country rank of a firm's market capitalization standardized to the interval (0,1). Kirschenheiter and Melumad (2002) show that capital market pressure might induce a reporting behavior where smoothing and big bath accounting co-exist in equilibrium. However, over the past two decades, capital market pressures gained significant importance and created incentives to boost earnings in an attempt to meet and exceed analyst forecasts (Degeorge et al., 1999; Dechow and Skinner, 2000). Capital market pressure therefore could be associated with early gain and delayed loss recognition making the accruals – CFO association less negative for positive CFO firm-years (i.e. less smoothing in case of positive economic income) and more negative for negative CFO firm-years (i.e. more smoothing in case of economic losses).

The second incentive variable is financial leverage - *LEVERAGE* - measured as the within-country rank of a firm's financial leverage ratio (long-term debt scaled by total assets) standardized to the interval (0,1). Sweeney (1994) shows that high leverage firms are more inclined to manage earnings to avoid debt covenant violations. On the other hand, banks are important monitors at the firm level in various European countries and quite often have a board seat in a firm (Degeorge and Maug, 2006). To the extent that banks have an important voice in the company's board and that reducing bankruptcy costs is one of their key objectives, banks can actually force firms to report more conservatively (Beatty et al., 2007). We argue that increased internationalization of EU lending activity has amplified the average creditor monitoring role significantly, which in turn suggest an increased demand for more timely loss recognition in more recent years.

The third incentive variable is a firm's labor intensity - *LABOR INTENS* - measured as within-country rank of a firm's ratio of number of employees scaled by market capitalization, again standardized in the interval (0,1). Bronars and Deere (1991) document that collective bargaining is well established in many EU countries. Firms can, however, take actions to reduce the impact of collective bargaining on corporate profits for instance by smoothing corporate earnings via accruals compensation (Liberty and Zimmerman, 1986). Because of the well established collective bargaining and because employee pressure in Europe are typically much greater compared to a typical US context, we conjecture that labor intensity is an important control variable in this EU setting. Similar to Bline and Cullinan (2003), we capture labor-related reporting incentives by the degree of labor intensity.

Finally, as suggested by Hayn (1995) and Joos and Plesko (2005), a firm's membership to high tech versus low-tech sectors is another variable affecting the accruals–cash flow association. We therefore include *HITECH*, a dummy variable equal to one if the firm is in a high tech sector (as defined in Section 3) and zero otherwise.

The upper right columns of Table 4 report the sign and significance levels of each of these four interaction variables, indicated by a '+' if significantly positive, '–' if significantly negative and '0' if insignificant; *and* whether the incentive control interaction effect absorbs the main effect (indicated with a '†'). With absorption of the main effect we mean that a significant ACC – CFO partial correlation coefficient (captured by β_1 for positive CFOs and β_2 for negative CFO firm-years) observed in regressions without incentive controls becomes insignificant after inserting an incentive control interaction. When this is the case, we conclude that firm-specific incentives drive the observed ACC – CFO association, more than country-specific GAAP reporting choices.

We find that capital market pressure has a moderating effect on the negative accruals–cash flow association for positive cash flow years. This is consistent with the conjecture that larger firms experience higher capital market pressures to report gains more timely. This positive effect of size is present for all periods in Denmark, France, Germany, Greece and the UK. For negative cash flow firms, size interactions are insignificant for most of the countries in nearly every period. For countries such as France, Germany, Sweden and the UK, however, we find that negative cash flow large firms recognize losses less timely compared to negative cash flow small firms. Both results are consistent with the capital market pressure argument as in Dechow and Skinner (2000).

Leverage has a significantly negative interaction effect for positive cash flow firms, suggesting that highly levered positive cash flow firms across almost any EU country smooth earnings more than low leverage firms. This is consistent with highly levered firms trying to lower earnings during positive cash flow years to build 'cookie jar' reserves that can be used in future, less positive years. By doing so, firms are more able to avoid potential violations of their debt covenants (Sweeney, 1994). For negative cash flow firms, results are mostly insignificant. However, for countries such as Germany, Italy and the UK the leverage interaction effect is significantly positive in the most recent period and absorbs the main effect. Consistent with the general trend of greater international lending activity in recent periods, monitoring power of international banks in highly levered firms potentially has become more important resulting in more conservative earnings reporting. This is especially true in the recession period 2001-03 [P3].

Further, negative CFO low tech firms have a significantly negative accruals–cash association, but for high tech firms in France, Germany and Italy the relation turns insignificant in the

period 2001-2003 [P3]. For positive cash flow firms in that same period, high tech membership makes the accrual–cash flow association further negative.

Finally, we find that for nearly all countries and across all time periods, labor-intensive firms have more compensating accruals to reduce positive CFO towards zero. This is in line with firm actions to reduce labor unions' influence to negotiate on shareholders' wealth (Liberty and Zimmerman, 1986). For labor intensive, negative CFO firms, the accrual–cash flow association is less negative (i.e. earnings become equally or even more negative than cash flows) in France, Germany and the UK in all periods. Moreover, this effect is most strong in period [3] and for Germany, labor pressure even drives the timely loss reporting in the first IFRS observations. This finding is consistent with the notion that negative CFO firms are more likely to consider restructuring plans. These firms might not want to compensate their negative CFO with accruals, but rather want to show high losses to facilitate layoff negotiations with the labor unions. The relation is especially strong in recession periods. Our findings on the labor intensity effect on the accruals- cash flow relation stress the importance of controlling for labor relations in studying earnings properties in Europe. Wu and Zhang (2007) show that the voluntary adoption of IAS/US GAAP is related to labor relations in continental Europe. However, we argue and find that the effect of labor relations on earnings properties is more generally present in Europe.

From studying reporting incentive effects on the accruals-cash flow relation in the EU over time, we conclude that reporting incentive effects still differ across the 14 EU countries, even in the year of mandatory adoption of IFRS, a result consistent with Ball et al. (2003). In addition, business cycles affect the intensity of the reporting incentive effect on the accruals-cash flow relation highlighting the often-overlooked importance of business cycle controls in accounting properties studies.

5. Additional Analyses

5.1 Growth, Accruals and Cash Flows

We now study the robustness of our findings to growth characteristics, given the changing nature of our EU sample which consists of both mature and more recently listed, high growth firms.[14] In particular, Dechow, Kothari and Watts (1998) show that for high growth firms, a sales increase (a characteristic of growth) first generates a net cash outflow (because of extending credit sales and already incurred production/service costs) whereas the net cash inflow is only realized with delay in subsequent periods (when the credit sales are collected). This association then mechanically intensifies the negative correlation in year-on-year cash flow changes.

To control for potential bias in our main results (Table 4) due to growth effects, we re-estimate equation (2) for each sub period and additionally include a growth control, measured as the standardized within-country firm-rank of asset growth, and interact this rank with country dummy effects of positive and negative CFO.[15] For the sake of parsimony, we report summary statistics of the accruals–cash flow coefficients for each period across the 14 countries without growth controls (left columns of Table 5) and compare those with the coefficients of (a) negative growth firms (middle columns) and (b) positive growth firms (right columns).

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[14] In an unreported analysis, we analyzed the accruals–cash flow relation for a constant sample of firms for which we have yearly data in the period 1991-2003 (periods 1 to 3). By focusing on a subset of more mature (lower growth) firms, we diminish potential growth effects on the ACC - CFO relation. The results are very similar to full sample results but the number of available firm-year observations drops to 740 resulting in an often very low number of country observations for negative CFO firms. Extending the constant sample up to 2005 would further decrease the sample size to 500.

[15] In unreported analyses (available upon request), we included the within-country standardized firm-rank of sales growth as an alternative growth control. Results are qualitatively similar for both growth controls.

INSERT TABLE 5 ABOUT HERE

From panel A of Table 5 we learn that (positive CFO, negative growth) - firms record on average an accruals–cash flow correlation coefficient that is 15 to 20% more negative than for the average firm. Unreported country coefficients show that this tendency of a more negative correlation is observed in *all* EU countries. Negative growth firms often experience decreasing accruals caused by lower inventory levels or accounts receivable. For these negative growth firms, the cash flow shock as described in Dechow et al. (1998) causes increasing CFO levels but simultaneously reduces working capital accruals (because of the reduction in inventory or accounts receivable), resulting in a more negative accruals–cash flow association.[16] Further, the growth effect on the ACC - CFO relation is stronger in macro-economic downturns ([P1] and [P3]) compared to other periods. This is not surprising given that more firms face structural cost reduction decisions in working capital and long term assets during recession periods.

The upper right part of Table 5 further shows that (positive CFO, positive growth) – firms exhibit a significantly *less negative* average CFO coefficient compared to average growth firms (between –25% and –45% for growth firms compared to –62% and –72% for average firms). For these firms, positive or increasing credit sales coincide with positive or increasing cash sales, making the ACC - CFO association less negative.

[16] Note that the decision to cut or reduce R&D investments (or sell of property, plant and equipment) because of disappointing growth figures, would result in a similar highly negative accruals – cash flow relation because of a decreasing long-term accrual expense (lower property depreciation) along with a simultaneous reduction in cash outflow (inducing a positive CFO change).

Panel B of Table 5 summarizes growth effects on the ACC – CFO correlation for negative CFO firms. For (negative CFO, negative growth) - firms, we show that the average ACC – CFO correlation becomes slightly positive in all four sample periods. These firms are the least financially healthy firms, typically facing low or negative profitability and deteriorating sales terms and supplier credit. These firms face short and long term cost reduction decisions, such as inventory sell out, reduction of credit sales terms, R&D cuts and PPE reduction. These actions cause one-time cash inflows, resulting in a less negative (or even positive) ACC – CFO relation. Finally, negative CFO and positive growth firms (presented in the right columns of Panel B) have a more negative ACC – CFO correlation, which is again consistent with the Dechow et al. (1998) argument that positive growth shocks can result in negative CFO.

In general, growth affects the ACC – CFO relation in predicted ways, consistent with Dechow et al. (1998). Moreover, these results seem to further confirm the incentive story from the previous section; growth characteristics at firm level partly shape the ACC – CFO association, over and above country or GAAP specifications. Future research on the ACC – CFO relation within one country should therefore further elaborate on these findings, while cross-country studies will need to bring the growth factor into account.

5.2 Market Return Proxy as an Additional Proxy for Good versus Bad News

In addition to using the CFO-based accruals proxies as in equation 2, we re-estimate the conditional ACC – CFO model by including stock return as a market proxy for economic gains and losses. To the extent that stock returns are a better proxy for (negative) economic losses than CFO-based measures, stock returns could be an important omitted variable in the

regression equation (2). Basu (1997) shows that (especially negative) stock returns contain significant information about accruals. Ball and Shivakumar (2006), however, show for a sample of US firms that "…*the market-based proxy is inferior to book-based proxies for the purpose of identifying 'bookable' accrued gains and losses*". It remains an empirical question whether their finding holds for European firms.

INSERT TABLE 6 ABOUT HERE

We estimate regression (2) for each sub period [1] to [4] separately and add the year-to-date stock return (*RET*), a dummy for negative stock returns (*DRET*) and the interaction term *DRET***RET*. Consistent with Basu (1997), conditional conservatism is manifested in the coefficient on market-based economic loss (*DRET***RET*). For the sake of brevity, we summarize the effect of including the market-based proxies in our book-based (i.e., accruals – cash flow) regressions in Table 6. Results are very consistent with the book-based regression estimates in Table 4.

More specifically, market return proxies do not contain significant accruals information in the case of positive returns as median (mean) coefficients for positive returns are close to zero for all observation periods. For negative return firms, by contrast, the market-based proxy does contain considerable information on accruals in almost every country and the median coefficient varies between 7.6% (P1), 7.2% (P2), 9.7% (P3) and 9.9% (P3). These results are

in line with US results of Ball and Shivakumar (2006), although our EU results show a lower accruals information content of negative stock returns on average.[17]

Further, the net effect of including this additional market proxy does not change our main ACC - CFO coefficients. Coefficients for positive CFO firms remain fairly stable after inclusion of the market return controls, with median deviations only varying between –1.62% (P1) and +1.0% (P4). For negative CFO firms, the median deviation in CFO coefficients vary between –8.68% (P1), –1.74% (P2), –6.02% (P3) and +3.07% (P4). This is consistent with negative stock returns absorbing accruals information from the book-based proxies. Finally, we find that the rank correlation of the country and period-specific CFO coefficients in the book-based regression specification (2) and the regression with additional return controls is above 0.83 in all observation periods and close to 1.00 in most periods. Taken together, these results further confirm that additionally including market-based proxies for economic losses next to book-based, financial statement proxies does not alter nor significantly improve the results from Table 4. Therefore, the use of the ACC – CFO regression specification as used above is justified.

6. Conclusion

In this study, we examine the underlying determinants that are driving earnings comparability in an international context. The joint FASB and IASB Conceptual Framework emphasizes the importance of earnings comparability as a key characteristic of decision-useful financial information, enabling users to identify similarities in and differences between underlying firm

[17] Ball and Shivakumar (2006) report a coefficient on *DRET*RET* varying between 10% and 14% depending on the regression specification they use. Ball and Shivakumar study a somewhat similar time period (1987-2003) but use accruals and cash flow data from cash flow statements instead of relying on estimates.

economics. To study earnings comparability internationally, we use a sample of 14 EU countries from 1990 up to the mandatory introduction of International Financial Reporting Standards (IFRS) in 2005. The current setting is particularly interesting, because Europe went through a period of high economic turbulence, where after the 1992 Single Market Program introduction, national market entry barriers and trade regulations were substantially reduced. Moreover, Europe experienced a mandated switch to one common set of accounting standards (IFRS) after several attempts were made to standardize national GAAP via the introduction of the 4th and 7th Directive.

After identification of EU earnings comparability drivers via variance decomposition techniques, we focus on the accruals accounting system and investigate the association between accruals and positive, respectively negative cash flows across the EU countries. Moreover, we examine the sensitivity of this association to industry membership, business cycles, and firm-specific reporting incentives across each country. We extend the ACC - CFO regression model as developed in Ball and Shivakumar (2005) by including reporting incentives that are related to capital market, debt financing, and labor relation pressures.

Overall, our results suggest that in an international context, economic fundamentals as well as firm characteristics and industry factors jointly determine the properties of accounting earnings over and above the existing country GAAP differences. Further, we conclude that reporting incentive effects are key drivers of the underlying reporting behavior across all observation periods and continue to exist in 2005, i.e. the year of mandatory adoption of IFRS in the EU. This evidence is in line with earlier findings as in Ball et al. (2003) and suggests that a mere switch to a common set of accounting standards (IFRS) is not necessarily sufficient to bring about the anticipated improvement in earnings comparability within Europe.

In addition, we conclude that business cycles affect the intensity of the reporting incentive effect on the accruals-cash flow relation, highlighting the often-overlooked importance of business cycle controls in accounting properties studies. Our results are robust to the inclusion of growth effects and controls for a market-based proxy of economic losses. The current results provide valuable insights in the nature of earnings as a key performance measure and its comparative properties in an international setting.

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Tables and Figures

Table 1: Descriptive Statistics (All firms) [(1)]

	1991-93 [1]	1997-99 [2]	2001-03 [3]	2005 * [4]
		Average		
earnings	0.027	0.035	-0.031	0.026
cash from operations	0.081	0.071	0.038	0.070
accruals	-0.054	-0.036	-0.069	-0.043
high-tech	0.075	0.114	0.213	0.229
market cap (size)	565.6	1,013.1	854.4	1,538.3
financial leverage	0.228	0.211	0.222	0.225
labor intensity	34.099	18.950	21.925	12.196
		Median		
earnings	0.031	0.043	0.019	0.040
cash from operations	0.080	0.077	0.067	0.080
accruals	-0.049	-0.035	-0.058	-0.041
High-tech	0.000	0.000	0.000	0.000
market cap (size)	68.3	105.1	64.7	175.2
financial leverage	0.205	0.193	0.202	0.207
labor intensity	19.576	9.725	10.549	6.272
		Standard deviation		
Earnings	0.069	0.090	0.185	0.105
cash from operations	0.091	0.108	0.177	0.125
Accruals	0.079	0.082	0.105	0.086
high-tech	0.264	0.318	0.409	0.420
market cap (size)	1,889.6	3,605.8	3,343.2	4,449.9
financial leverage	0.205	0.165	0.193	0.184
labor intensity	48.755	31.263	37.160	22.972
observations	5,595	7,931	9,536	2,048

[(1)] The sample consists of 25,110 firm-year observations from 14 EU countries used in the regressions shown in table 4 (after outlier deletion). Local currencies have been transformed to euros. Earnings, cash from operations and accruals are scaled by total assets. Earnings are measured as net income after preferred dividends, Accruals are calculated as (ΔCA - ΔCASH) - (ΔCL - ΔSTDEBT - ΔTAXPAY) – DEPR where ΔCA is the change in current assets (WC02201) from year t to t-1, ΔCASH is the change in cash (WC02001), ΔCL is the change in current liabilities (WC03101), ΔSTDEBT is the change in short term debt (WC03051), ΔTAXPAY is the change in taxes payable (WC03063) and DEPR is the annual depreciation and amortization expense in year t (WC01151), where 'WC*number*' represents the Thomson Financial Worldscope code. The last 4 variables represent the control variables in the regression model in table 4: high-tech (a dummy variable equal to 1 if the firm belongs to a high-tech industry (aerospace & defense 271, pharma & biotech 457, fixed line telecom 653, mobile telecom 657, software & computer svc 953, technology hardware & equipment 957), market capitalization (value of equity measured at end of fiscal year, expressed in million euro), financial leverage (short-term and long-term debt divided by total assets), and labor intensity (number of employees divided by market capitalization). We use the Industry Classification Benchmark, also known as FTSE Actuaries Classification System, to determine whether a firm belongs to a high-tech sector. All financial and insurance firms are excluded from the sample. (*) For 2005, only IFRS adopters are included in the table. CFO is the reported CFO (the cash flow statement is required under IFRS), and accruals are calculated as the difference between earnings and CFO.

Table 2: Descriptive Statistics (By country) [(1)]

Variable	period	AUT	BEL	DNK	FIN	FRA	GER	GRC	IRL	ITA	NLD	PRT	SPA	SWE	UK
Earnings	[1]	0.014	0.022	0.029	0.003	0.025	0.015	0.055	0.038	0.011	0.047	0.017	0.008	0.012	0.034
	[2]	0.030	0.036	0.043	0.067	0.028	0.019	0.055	0.044	0.031	0.068	0.027	0.054	0.036	0.034
	[3]	0.006	0.014	0.004	0.015	-0.006	-0.057	0.022	-0.024	-0.026	-0.004	0.003	0.035	-0.087	-0.064
	[4]	0.043	0.054	0.033	0.039	0.029	0.007	0.023	0.033	0.016	0.043	0.019	0.049	0.014	0.037
CFO	[1]	0.059	0.087	0.082	0.074	0.085	0.084	0.054	0.067	0.050	0.104	0.073	0.064	0.072	0.085
	[2]	0.079	0.079	0.066	0.108	0.074	0.068	0.048	0.069	0.074	0.097	0.064	0.089	0.063	0.067
	[3]	0.084	0.093	0.066	0.091	0.066	0.030	0.038	0.014	0.029	0.073	0.063	0.088	-0.008	0.007
	[4]	0.095	0.106	0.102	0.086	0.065	0.077	0.042	0.067	0.057	0.083	0.065	0.087	0.051	0.067
Accruals	[1]	-0.045	-0.065	-0.053	-0.071	-0.060	-0.069	0.000	-0.030	-0.039	-0.057	-0.056	-0.056	-0.060	-0.051
	[2]	-0.050	-0.042	-0.023	-0.041	-0.046	-0.049	0.007	-0.025	-0.043	-0.028	-0.037	-0.035	-0.027	-0.033
	[3]	-0.078	-0.079	-0.062	-0.076	-0.071	-0.087	-0.015	-0.038	-0.055	-0.077	-0.060	-0.053	-0.079	-0.071
	[4]	-0.051	-0.052	-0.069	-0.047	-0.036	-0.070	-0.019	-0.034	-0.041	-0.041	-0.046	-0.038	-0.037	-0.031
High-tech	[1]	0.000	0.078	0.093	0.129	0.094	0.055	0.059	0.029	0.085	0.089	0.000	0.067	0.063	0.078
	[2]	0.000	0.109	0.111	0.100	0.135	0.088	0.086	0.054	0.069	0.104	0.057	0.061	0.168	0.137
	[3]	0.078	0.183	0.165	0.263	0.249	0.258	0.113	0.088	0.183	0.250	0.122	0.083	0.305	0.198
	[4]	0.143	0.214	0.255	0.287	0.271	0.293	0.110	0.143	0.170	0.253	0.154	0.100	0.337	0.170
Market cap	[1]	238.6	738.2	261.6	306.9	641.4	781.1	73.9	190.5	330.9	638.1	67.5	773.3	600.1	565.5
(size)	[2]	328.3	1,187.3	570.9	818.9	1,071.0	1,316.9	383.5	643.2	1,642.1	1,662.7	570.2	1,617.8	1,009.2	865.2
	[3]	390.7	721.8	567.7	557.3	967.7	948.9	199.3	762.7	999.7	1,438.3	662.6	2,033.9	590.8	854.8
	[4]	1,388.2	1,504.4	1,149.4	800.8	1,886.2	1,207.9	377.2	1,612.3	1,575.5	1,779.7	1,116.8	3,598.5	1,028.8	2,077.9
Leverage	[1]	0.213	0.251	0.288	0.454	0.248	0.198	0.220	0.217	0.273	0.213	0.261	0.262	0.312	0.201
	[2]	0.258	0.249	0.252	0.262	0.214	0.209	0.212	0.233	0.223	0.222	0.272	0.179	0.208	0.192
	[3]	0.270	0.279	0.312	0.239	0.229	0.207	0.254	0.222	0.265	0.253	0.342	0.254	0.179	0.182
	[4]	0.242	0.224	0.269	0.262	0.221	0.207	0.320	0.275	0.267	0.208	0.406	0.300	0.156	0.174
Labor intensity	[1]	38.600	25.114	24.706	43.394	44.249	24.020	15.731	16.299	31.266	36.170	36.948	36.465	41.555	34.172
	[2]	27.665	16.607	15.097	14.423	24.603	20.392	9.418	8.988	12.022	16.373	25.155	9.435	13.954	19.803
	[3]	28.087	21.645	23.235	16.271	27.667	27.292	9.859	13.274	12.449	25.782	32.702	11.584	16.576	20.817
	[4]	11.923	10.442	8.991	10.490	16.938	16.437	12.653	6.605	7.543	10.164	14.657	6.242	7.514	10.826

[(1)] The table shows average values of each variable over 4 periods for each of the 14 EU countries. All variables are defined in Table 1. The period numbers refer to 1991-93 ([1], contraction period), 1997-99 ([2], expansion period), 2001-2003 ([3], contraction period) and 2005 ([4], expansion period).

Table 3: Variance Component Decompositions [(1)]

Varcomp Model:	Firm	Year	Country	Country*year	Industry	Industry*year	Size	Error
Model 1	17,5%	3,9%	0,6%	3,1%	5,0%	10,1%	10,6%	49,2%
Model 2	22,9%	4,5%			5,2%	10,5%		56,9%
Hawawini Model	35,8%	1,0%			8,1%	3,1%		52,0%

[(1)] This table reports the proportional variance components to total variance in earnings (scaled by lagged total assets) for 2 different model specifications and additionally includes the results of Hawawini et al. (2003) based on a US sample for the period 1991-2000 as benchmark results. Model 1 is our extensive VARCOMP model incorporating stable and transient firm-specific, stable and transient country, stable and transient industry effects next to stable size effects. Industry categories are according to ICB Industry Classification standards and contain 32 industries (See Appendix 1). Size is a categorical variable measured as the firm-year quintile rank of a firm's market capitalization. To allow for direct comparison between a US and European context, we alternatively run model 2 which contains the same independent variables as the Hawawini et al. model. For more information on variance component decomposition models, we refer to Appendix 2. We use the VARCOMP procedure in SAS software to estimate the different variance components. Model 1 has the following form:

$$\sigma^2_{Earnings} = \sigma^2_{year} + \sigma^2_{firm} + \sigma^2_{ind} + \sigma^2_{country} + \sigma^2_{ind,year} + \sigma^2_{country,year} + \sigma^2_{size} + \sigma^2_{error}$$

Table 4: Multivariate Regression of Accruals on Cash Flows Per Sub-Period Controlling for Reporting Incentives and Industry [(1)]

Panel A: positive CFO

	NUMBER OF OBSERVATIONS				β_1 COEFFICIENT				EFFECT ON β_1 WHEN CONTROLLING FOR													
									SIZE				LEVERAGE				HIGH-TECH				LABOR INTENS			
	[1]	[2]	[3]	[4]	[1]	[2]	[3]	[4]	[1]	[2]	[3]	[4]	[1]	[2]	[3]	[4]	[1]	[2]	[3]	[4]	[1]	[2]	[3]	[4]
AUSTRIA	65	154	145	36	-80.3*	-75.7*	-81.6*	-95.0*	0	0	+	0	–	–	0	0	0	+	0	0	0	–	0	0
BELGIUM	115	154	206	64	-73.4*	-59.6*	-50.4*	-38.2*	0	0	+	+	–	–	–	–	0	0	0	0	–	–	–	–
DENMARK	156	218	240	44	-71.5*	-65.3*	-54.1*	-71.6*	+	+	+	+	–	–	–	0	+	0	+	0	–	–	–	–†
FINLAND	59	190	258	84	-71.3*	-56.5*	-61.4*	-41.9*	+	0	0	0	0	–	–	0	0	0	0	0	0	–	–	0
FRANCE	799	1226	1430	289	-71.4*	-69.5*	-65.0*	-71.6*	+	+	+	+	–	–	–	–	0	0	–	0	–	–	–	–
GERMANY	544	835	1146	299	-86.9*	-86.7*	-70.1*	-80.6*	+	+	+	+	–	–	–	–	+	0	–	0	–	–	–	–
GREECE	57	219	428	106	-70.8*	-73.0*	-81.7*	-89.8*	+	+	+	+	–	0	–	–	0	0	0	0	–	–	–	–†
IRELAND	82	103	90	21	-54.3*	-55.3*	-49.9*	-25.4	0	0	0	0	0	0	0	0	0	0	–	0	–	–	–†	0
ITALY	213	279	362	116	-73.8*	-83.0*	-71.5*	-60.6*	+	0	+	+	–	–	–	–	0	0	0	0	–	–	–	–
NETHERL	238	250	243	64	-68.2*	-71.0*	-56.1*	-47.8*	+	+	+	0	–	–	–	–†	0	+	0	0	–	–	–	0
PORTUGAL	57	133	117	28	-74.2*	-74.1*	-75.5*	-68.9*	+	+	+	0	–	0	0	0	0	+	0	0	–	–	–	0
SPAIN	117	232	263	71	-79.2*	-62.0*	-55.3*	-57.4*	+	0	+	0	–	0	–	–	0	0	0	0	–	–	–	–
SWEDEN	184	350	440	151	-65.3*	-51.9*	-36.9*	-61.0*	+	+	+	0	–	–	0	0	0	0	–	0	–	–	–	0
UK	1982	1977	1624	294	-64.9*	-50.5*	-57.3*	-58.7*	+	+	+	+	–	–	–	–	+	+†	0	0	–	–	–	–
AVG	*333*	*451*	*499*	*119*	-71.8	-66.7	-61.9	-62.0																
STD					7.7	11.3	13.0	19.6																

Panel B: negative CFO

	NUMBER OF OBSERVATIONS				β_2 COEFFICIENT				EFFECT ON β_2 WHEN CONTROLLING FOR													
									SIZE				LEVERAGE				HIGH-TECH				LABOR INTENS			
	[1]	[2]	[3]	[4]	[1]	[2]	[3]	[4]	[1]	[2]	[3]	[4]	[1]	[2]	[3]	[4]	[1]	[2]	[3]	[4]	[1]	[2]	[3]	[4]
AUSTRIA	19	11	10	2	-89.8*	-43.6	14.0	.	0	0	0	.	0	0	0	.	0	0	0	.	0	0	0	.
BELGIUM	9	20	20	6	-64.2*	-21.0	-18.5	.	0	0	0	.	0	0	0	.	0	–	0	.	0	0	0	.
DENMARK	14	36	37	8	10.3	-38.8	14.3'	40.8	0	0	0	0†	0	0	0	0	0	0	0	0†	0	0	0	0
FINLAND	3	11	24	6	-68.4	-0.5	14.5'	.	0	0	0	.	0	0	0	.	0	0	0	.	0	0	0	.
FRANCE	84	198	328	66	-89.8*	5.0	19.3'	-37.1*	0	–	–	–	0	–	0	–	0	+	+†	0†	+	+	+†	0
GERMANY	97	193	441	73	-51.0*	-27.9*	10.9'	-10.9*	0	–	–	–	0	–	+†	0	0	0	+†	+	+	+	+†	+†
GREECE	23	99	223	41	-84.0*	-87.3*	-89.5'	-90.6*	0	0	–	–	0	+	+	+	0	0	0	+	0	0	+	+
IRELAND	11	17	32	3	25.6	1.5	0.4	.	0	0	0	.	0	0	+	.	0	0	+	.	0	0	+	.
ITALY	73	41	125	30	-58.6*	-86.6*	14.5'	-56.1*	0	0	0	–	0	0	+†	0†	0	0	+†	0	0	0	0	0
NETHERL	11	30	29	8	-100.7*	-105.1*	11.2	10.4	0	0	0	0	0	0	0	0	0	0	0	+	0	0	0	–
PORTUGAL	13	29	21	10	-93.0	-85.8*	-103.1 '	-35.6	0	0	0	–	0	0	0	0	0	0	0	+	0	0	0	0
SPAIN	18	23	15	5	-36.6*	-83.1*	4.8	.	0	0	0	.	0	0	0	.	0	0	+	.	0	0	0	.
SWEDEN	21	63	195	46	-96.5*	20.2*	16.5'	-3.1	0	–	–	0	0	–	0	0	0	0	+	+	0	0	+	0
UK	323	564	704	77	2.1	20.1*	9.3'	1.1	–	–	–	–	+	–	+†	–	–	+	0	+	+	+	+	+
AVG	*51*	*95*	*157*	*27*	-56.8	-38.1	-5.8	-20.1																
STD					42.8	46.2	40.7	39.1 *																

(1) The table reports the estimation results for the following regression:

$$
\begin{aligned}
ACC_t = {} & \alpha_0 + \sum_{i=1}^{14} \alpha_{1,i} DPCFO_t + \sum_{i=1}^{14} \alpha_{2,i} DNCFO_t \\
& + \sum_{i=1}^{14} \beta_{1,i} DPCFO_t \times CFO_t + \sum_{i=1}^{14} \beta_{2,i} DNCFO_t \times CFO_t \\
& + \sum_{i=1}^{14} \gamma_{1,i} DPCFO_t \times INCENTV_t + \sum_{i=1}^{14} \gamma_{2,i} DNCFO_t \times INCENTV_t \\
& + \sum_{i=1}^{14} \delta_{1,i} DPCFO_t \times CFO_t \times INCENTV_t + \sum_{i=1}^{14} \delta_{2,i} DNCFO_t \times CFO_t \times INCENTV_t + \varepsilon_t
\end{aligned}
$$

The regression is separately estimated for four separate sub periods, [1]: 1991-93 (recession/contraction), [2]: 1997-99 (expansion), [3]: 2001-2003 (recession/contraction) and [4]: 2005 (expansion *and* first IFRS adoption year). We exclude the top and bottom 1% outliers based on a multivariate deletion rule for observations having the largest outlier effects on our regression results. Results remain stable if we remove the top and bottom 0.5% (2%). This table includes all country-firm observations and both positive and negative CFO (panel A and B respectively). The columns with the β_1 (respectively β_2) COEFFICIENT estimates (multiplied by 100) shows the regressions estimates on the country's CFO for a restricted model, i.e. without including any control variable ($\gamma_1, \gamma_2, \delta_1, \delta_2$ = 0). The asterisk indicates whether the coefficient is significant at the 5% level. The number of observations refers to the observations for a specific country in one of the four time periods. The number of observations in period [4] is less than one third of the total number of observations in the previous periods mainly because 2005 firm-data are only included if the firm reports according to IFRS standards. Specific market segments (like the AIM segment in London) allow firms to report in accordance with local GAAP until 2007. In the right hand side of Table 4, we include results from estimating the full model ($\gamma_1, \gamma_2, \delta_1, \delta_2$ ≠ 0), where the variable INCENTV is respectively the standardized (bounded between 0 and 1) firm-rank size (market capitalization), leverage (short-term and long-term debt scaled by total assets), high-tech (a dummy variable equal to 1 if the firm belongs to a high-tech industry, as defined in Table 1), and labor intensity (number of employees scaled by market capitalization) within a country. Reported in the Table 4 is the impact of δ_1 on β_1 (respectively δ_2 on β_2 in panel B). In particular, a "+" in the table indicates a significant (at 5% level) effect of the INCENTV variable on the country-CFO β_1 (respectively β_2) coefficient, "– " indicates a significantly negative effect, and "0" indicates no significant effect. A † next to the incentive control effect indicates that the INCENTV effect absorbs the main country-CFO β_1 (respectively β_2) effect.

Table 5: Growth Effects and Accruals – CFO correlations [(1)]

Panel A: positive CFO

	β_1 COEFFICIENT FROM RESTRICTED MODEL				$\beta_1 + \delta_1 x\overline{GROWTH_{neg}}$ FROM FULL MODEL				$\beta_1 + \delta_1 x\overline{GROWTH_{pos}}$ FROM FULL MODEL			
	[1]	[2]	[3]	[4]	[1]	[2]	[3]	[4]	[1]	[2]	[3]	[4]
AVG	-71.8	-66.7	-61.9	-62.0	-93.4	-82.0	-93.6	-78.1	-47.0	-47.3	-25.1	-45.0
MED	-71.5	-67.4	-59.4	-60.8	-95.1	-81.2	-94.1	-83.8	-48.5	-47.6	-24.1	-45.9
STD	7.7	11.3	13.0	19.6	7.5	11.2	10.6	18.8	13.6	11.1	17.5	21.1
STD/AVG	-0.11	-0.17	-0.21	-0.32	-0.1	-0.1	-0.1	-0.2	-0.3	-0.2	-0.7	-0.5

Panel B: negative CFO

	β_2 COEFFICIENT FROM RESTRICTED MODEL				$\beta_2 + \delta_2 x\overline{GROWTH_{neg}}$ FROM FULL MODEL				$\beta_2 + \delta_2 x\overline{GROWTH_{pos}}$ FROM FULL MODEL			
	[1]	[2]	[3]	[4]	[1]	[2]	[3]	[4]	[1]	[2]	[3]	[4]
AVG	-56.8	-38.1	-5.8	-58.4	13.6	2.2	11.9	-2.5	-124.5	-79.9	-92.5	-63.7
MED	-66.3	-33.4	11.1	-36.4	13.6	12.7	19.4	14.7	-115.2	-84.6	-98.2	-64.7
STD	42.8	46.2	40.7	103.3	39.5	46.3	35.6	39.8	37.5	26.5	69.6	49.3
STD/AVG	-0.8	-1.2	-7.0	-1.8	2.9	21.1	3.0	-16.1	-0.3	-0.3	-0.8	-0.8

[(1)] This table reports the estimation results for:

$$ACC_t = \alpha_0 + \sum_{i=1}^{14} \alpha_{1,i} DPCFO_t + \sum_{i=1}^{14} \alpha_{2,i} DNCFO_t + \sum_{i=1}^{14} \beta_{1,i} DPCFO_t xCFO_t + \sum_{i=1}^{14} \beta_{2,i} DNCFO_t xCFO_t$$

$$\sum_{i=1}^{14} \gamma_{1,i} DPCFO_t xGROWTH_t + \sum_{i=1}^{14} \gamma_{2,i} DNCFO_t xGROWTH_t + \sum_{i=1}^{14} \delta_{1,i} DPCFO_t xCFO_t xGROWTH_t + \sum_{i=1}^{14} \delta_{2,i} DNCFO_t xCFO_t xGROWTH_t + \varepsilon_t$$

This regression differs from regression (2) in that we additionally include a GROWTH variable, defined as the standardized within-country firm-rank of asset growth. The table reports summary statistics (mean, median, standard deviation) of the country regression estimates for positive (panel A) and negative cash flow observations (panel B) separately. The first four columns report the average β_1 (respectively β_2) coefficients when no growth control is included in the model (i.e. when $\gamma_1, \gamma_2, \delta_1, \delta_2$ = 0 ; equal to the results in β_1 (respectively β_2) -columns of Table 4). Columns 5 till 8 report the average sum of the respective $\beta_{2,i}$ coefficient plus $\delta_{2,i}$ times the average growth rank for negative growth observations. The last four columns contain similar results but for positive growth observations ($\beta_{1,i} + \delta_{1,i} x \overline{GROWTH_{pos,i}}$) where $\overline{GROWTH_{pos,i}}$ represents the average growth rank for positive growth observations.

Table 6: Market Return as an Additional Proxy for Gains and Losses [(1)]

Panel A	β_3 (%)				$\beta_3 + \beta_4$ (%)			
	[1]	[2]	[3]	[4]	[1]	[2]	[3]	[4]
MEDIAN	0.50	0.10	-0.50	0.30	7.6	7.2	9.7	9.9
MIN	-3.07	-0.27	-2.80	-4.08	-2.0	-1.7	5.3	-11.9
MAX	2.25	2.12	3.11	2.31	13.2	15.4	16.4	23.4
STDEV	1.52	0.83	1.60	1.56	4.14	4.43	3.44	11.60
Panel B	β_1 -change (%)				β_2 -change (%)			
	[1]	[2]	[3]	[4]	[1]	[2]	[3]	[4]
MEDIAN	-1.62	-0.80	-1.95	1.00	-8.68	-1.74	-6.02	3.07
MIN	-10.99	-5.70	-10.66	-16.24	-29.98	-24.53	-29.39	-10.89
MAX	3.20	1.17	7.98	7.98	22.99	6.39	2.43	19.16
STDEV	3.83	2.03	4.66	7.57	16.23	18.22	9.61	10.53
RANK*CORR*	0.84	0.98	0.88	0.90	0.90	0.85	0.91	0.94

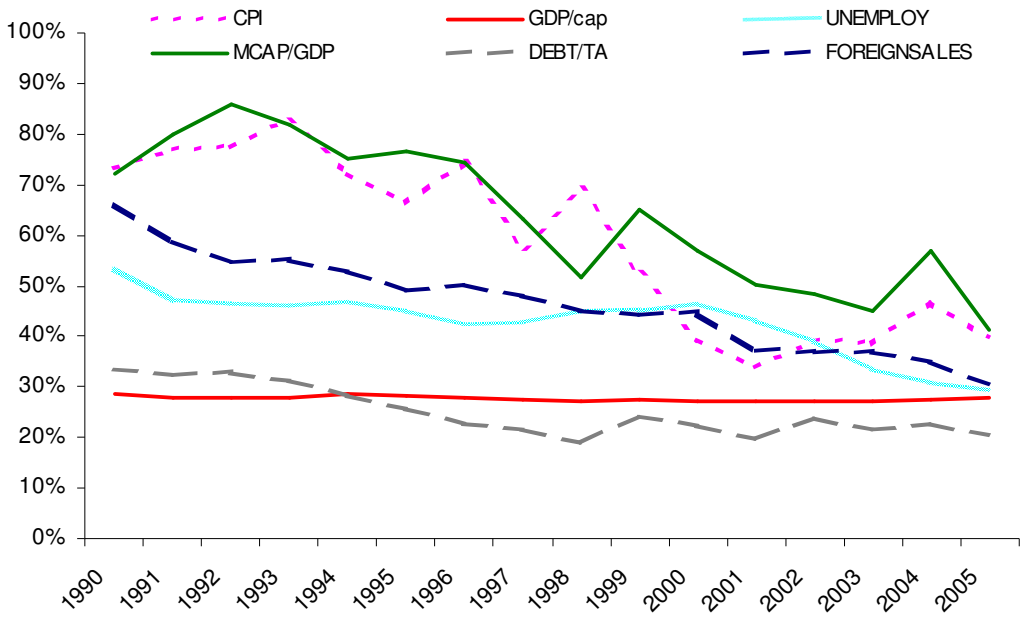
(1) The table reports summary estimation results for the following regression:

$$ACC = \alpha_0 + \sum_{i=1}^{14} \alpha_{1,i} DPCFO_t + \sum_{i=1}^{14} \alpha_{2,i} DNCFO_t + \sum_{i=1}^{14} \alpha_{3,i} DRET_t + \sum_{i=1}^{14} \beta_{1,i} DPCFO_t xCFO_t +$$

$$\sum_{i=1}^{14} \beta_{2,i} DNCFO_t xCFO_t + \sum_{i=1}^{14} \beta_{3,i} RET_t + \sum_{i=1}^{14} \beta_{4,i} DRET_t xRET_t + \varepsilon_t$$

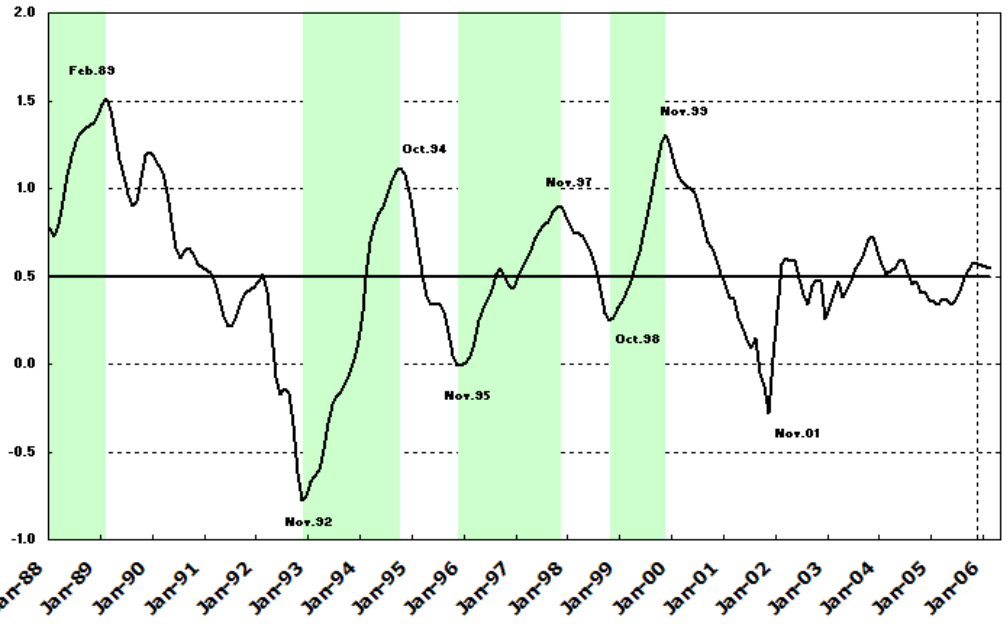
This regression differs from regression (2) in that we here additionally include stock returns as market-based proxies for economic gains (RET) and losses (DRET*RET), by adding (*i*) a dummy variable for negative stock returns (DRET), (*ii*) stock returns (RET) and (*iii*) the interaction effect for negative returns (DRET*RET) to the initial regression model. Stock returns are measured as the return on firm i from 9 months before fiscal year-end t to three months after fiscal year-end *t* as in Basu (1997). Panel (A) reports summary statistics (mean, median, minimum, maximum and stdev) of the country RET (left column) and DRET (right column) coefficients. Panel (B) reports summary statistics of the increase (+) versus decrease (–) for the β_1 and β_2 coefficients when the full model above is compared to a more restricted model where no market-based return controls are included (i.e., α_3, β_3 and β_4 =0) and this both for positive (left column) and negative (right column) CFO coefficients. In addition, the rank correlation of country-ranked regression coefficients before and after including market-based return controls.

Figure 1: Macro-Economic Convergence Patterns [(1)]



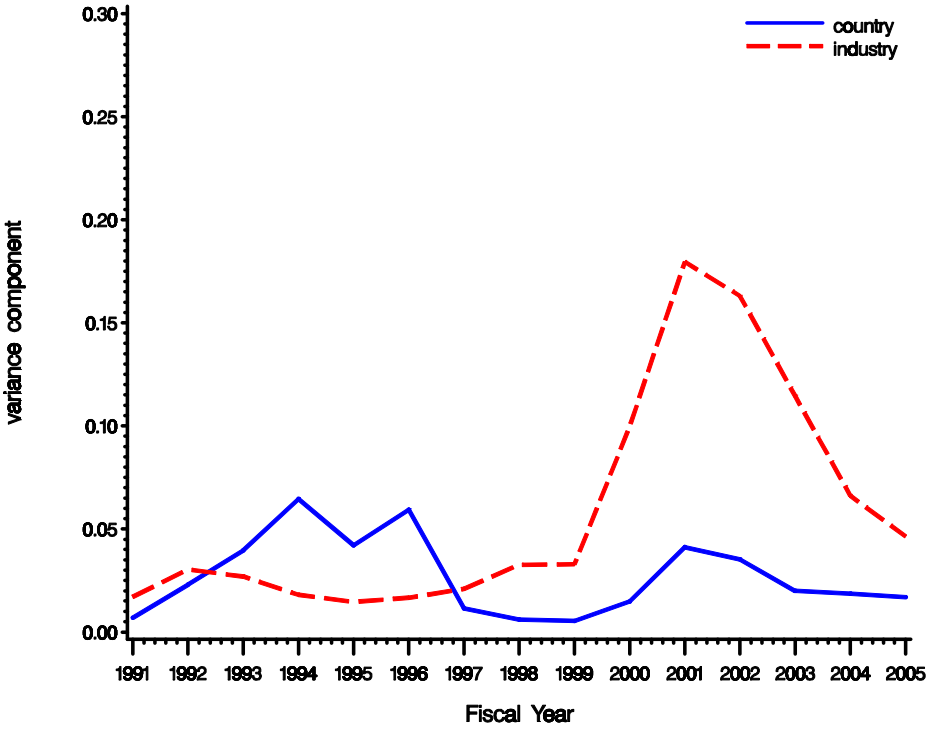
[(1)] This Figure displays the yearly dispersion of macro-economic and institutional variables across 14 EU countries and is measured as: (standard deviation of variable /average of variable). *CPI* measures inflation rates and refers to the Consumer Price Index, *GDP/cap* to the Gross Domestic Product per capita and *Unemploy* is the unemployment dispersion across 14 EU countries. *MCAP/GDP* is the market capitalization of all listed firms in that country divided by the Gross Domestic Product, *Debt/TA* is the ratio of firm debt to total firm assets and *Foreignsales* is the proportion of foreign sales to total sales. CPI, GDP/capita, unemployment data and MCAP/capita come from Worldbank records, while Debt/TA and Foreignsales are taken from Worldscope.

Figure 2: CEPR Recession – Expansion indicator in Europe [1]



[1] This graph shows the values of the EuroCOIN, i.e. the monthly indicator of the euro area business cycle published by CEPR for the period January 1988 to February 2007. The shaded areas in the chart correspond to periods which the indicator suggests are cyclical expansions.

Figure 3: Relative variance in earnings explained by industry and country



Appendix 1:
Industry Classification Benchmark (ICB): 32 non-financial industries

Industry Group	3 digit Industry
(0001) Oil & Gas	(#530) Oil & Gas Products
	(#570) Oil Equipment & Services
(1000) Basic Materials	(#135) Chemicals
	(#173) Forestry & Paper
	(#175) Industrial Metals
	(#177) Mining
(2000) Industrials	(#235) Construction & Materials
	(#271) Aerospace & Defense (HT)
	(#272) General Industrials
	(#273) Electronic & Electronic Equipment (HT)
	(#275) Industrial Engineering
	(#277) Industrial Transportation
	(#279) Support Services
(3000) Consumer Goods	(#335) Automobiles & Parts
	(#353) Beverages
	(#357) Food Producers
	(#372) Household Goods
	(#374) Leisure Goods
	(#376) Personal Goods
	(#378) Tobacco
(4000) Health care	(#453) Healthcare equipment & Services
	(#457) Pharmaceuticals & Biotechnology (HT)
(5000) Consumer Services	(#533) Food & Drug Retailers
	(#537) General Retailers
	(#555) Media
	(#575) Travel & Leisure
(6000) Telecommunications	**(#653) Fixed line Telecommunications (HT)**
	(#657) Mobile Telecommunications (HT)
(7000) Utilities	(#753) Electricity
	(#757) Gas, Water & Multi-utilities
(9000) Technology	**(#953) Software & Computer Services (HT)**
	(#957) Technology Hardware & Equipment HT)

This table provides an overview of al 32 non-financial industry classifications according to the International Classification Benchmark (ICB). High tech industries are indicated with (HT) and are marked in bold.

Appendix 2: A note on variance decomposition models

A variance components procedure (PROC VARCOMP in SAS) provides estimates for variances of random effects under a general linear model framework (Searle et al. 1992). More specifically, the procedure returns the proportions of explained variation of the dependent variable by each independent (random effects) variable. . The procedure requires effects to be class (or level) variables, while there is no restriction on testing main, interaction or nested effects. As with most variance procedures, the method is based on averages. Applied to the current setting, this means that an average earnings number is calculated for each level of each independent variable. Next, these independent variable averages are substracted from the overall earnings mean, and the difference is summed across the levels of the variable. Finally, the summed differences are multiplied by appropriate weights, taking into account e.g. unbalanced data.

The technique was previously introduced and applied in the industrial organizations literature (e.g., Schmalensee 1985). One of the main advantages of this technique is that it allows for estimating the variance explained by multiple independent variables simultaneously and is not dependent on a priori assumed hierarchical relations between the independent variables. At the same time, this technique assumes that each explanatory factor is normally distributed with a mean of zero and an unknown, independent variance σ_X^2.

Despite the fact that variance component analyses are easy to interpret and are not flawed by the entry choice or sequence of independent variables, this technique has its shortcomings too. One of the most important ones is the absence of standard techniques available to provide significance testing on the variance components (McNamara et al. 2003).