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Accounting for asset impairment: a test for IFRS compliance across Europe

A research report by the Centre for Financial Analysis
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Overview

Accounting for asset impairment: a test for IFRS compliance across Europe

The introduction of International Financial Reporting Standards (IFRS) across Europe in 2005 aimed to deliver considerable benefits to the entire business community. Improved cross-country comparability of financial information, lowered cost of capital and increased market liquidity are just a few of the many benefits that proponents of IFRS expected corporations to enjoy through increased uniformity in financial reporting organized around the principles-based IFRS system. While IFRS have led to significantly greater consistency in accounting recognition and measurement and far greater disclosure of information in financial statements, the burden of compliance is heavy and the significant effort required to meet disclosure requirements is seen by companies to be impacting upon reporting practices.

As part of our research agenda at the Centre for Financial Analysis and Reporting Research, we undertook a study to investigate the degree of compliance with International Financial Reporting Standards by analyzing recent impairment disclosures within a sample of listed companies across Europe during 2010-11. Our research also aimed to shed light on the extent to which reductions in stock market values of companies are mirrored in asset write-offs during the post-IFRS adoption period.

The key findings of the research include:

- ▶ There is considerable variation across European countries in compliance with some impairment disclosure requirements, suggesting uneven application of IFRS.
- ▶ Compliance with impairment disclosures requiring greater managerial involvement in making discretionary reporting choices (high effort) is lower than compliance with low effort disclosure requirements, revealing a tendency to use boilerplate language.
- ▶ High-quality impairment reporting is more likely to be found in companies that operate in countries with a stronger regulatory and institutional infrastructure, for example the United Kingdom and Ireland. In contrast, impairment disclosures appear to be of lower quality in countries where regulatory scrutiny is weaker.
- ▶ The timeliness of recognition of bad news in earnings appears to be dependent on the quality of the institutional environment. Companies operating in strong regulatory and enforcement settings appear to recognize economic losses on a more timely basis than those based in jurisdictions where enforcement is anticipated to be weaker.

“While IFRS have brought greater consistency in reporting, the burden of compliance is heavy”

These findings highlight a number of issues which companies may wish to consider in managing their reporting going forward. First, the use by companies of boilerplate language to alleviate the burden of compliance is concerning. It suggests that the pressure on senior finance executives to support compliance with IFRS is not always prioritized as it should be. While use of boilerplate language may be a means to fast track the meeting of reporting requirements in the short-term, disclosures should be reviewed regularly and on a timely basis. Failure to do so can expose companies to risk which can have implications on future reporting periods and, in a worst case scenario, could impact company reputation if restatements are subsequently required.

Second, the indication that countries with stronger institutional infrastructures are associated with higher quality financial reporting has implications for future investment decisions. Where more and better financial information is available to the market, it follows that access to capital may be improved and investment perceived to be lower risk because investor uncertainty is mitigated.

Ultimately, IFRS appear to have had a significant and positive impact on the financial reporting practices of many companies across Europe. However, the paper that follows suggests that there is scope for further improvement in the application of IFRS requirements. It offers some insights into specific behaviors with respect to impairment disclosures, which may be relevant to companies as they consider how their own reporting practices compare and where they fit on the spectrum of compliance.

We believe this paper contributes to the important ongoing discussion on the effectiveness of IFRS implementation and enforcement. It also provides useful insights for those with responsibility in the areas of financial reporting oversight and corporate governance.

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1. Executive summary

Has IFRS adoption led to economic benefits?

Recent academic research shows that listed companies and investors have both experienced benefits following the introduction and adoption of International Financial Reporting Standards. Examples of potential available benefits include a lower cost of capital, increased investor demand for securities and greater stock market liquidity.

However, academic studies also highlight the fact that actual IFRS reporting practices may not always be congruent with the requirements set out in the standards. When compliance with IFRS is weak, benefits are not expected to follow. Research findings suggest that compliance is likely to be related to the quality of a country's enforcement and institutional regimes and to firm-specific factors that reflect on the incentives and governance mechanisms supporting high-quality financial reporting. We examine this issue in the context of impairment reporting in Europe.

Objectives of this study

An assessment of accounting practices for asset impairments is especially important in the context of financial reporting quality in that it requires the exercise of considerable management judgment and reporting discretion. The importance of this issue is heightened during periods of ongoing economic uncertainty as a result of the need for companies to reflect the loss of economic value in a timely fashion through the mechanism of asset write-downs.

In this study, we investigate how well impairment reporting requirements under IFRS have been implemented in recent European financial reporting practice. We identify the timeliness of impairment losses for non-current non-financial assets in Europe and highlight firm-specific and country-wide factors associated with the quality of impairment disclosures.

How we have completed this research

Our empirical study is structured in two stages:

In the first stage, in light of the extent of judgment and discretion offered to companies reporting under IFRS, we provide broad evidence on the timeliness of asset write-offs recognized in earnings benchmarked against a proxy for economic losses. In common with much academic research, we assume that, in an efficient market, stock returns reflect the magnitude of economic losses suffered by a firm in an unbiased manner. We report evidence based on a large sample of 4,474 listed companies from the European Union, plus Norway and Switzerland, on whether and how the timeliness of recognition of economic losses in the post-2005 period varies across countries domiciled in different institutional environments in predictable ways. Our selection is based on a measure of impairment intensity, which we define as the total non-current non-financial asset impairment charge as a percentage of total assets at the beginning of the year. This approach to identifying our sample ensures that the selected companies are those in which impairments are a relatively material disclosure item.

To evaluate the impact of differences in institutions across European countries, we group countries into three clusters: cluster 1 includes countries characterized as outsider economies (large and developed stock markets, dispersed ownership structures, strong outside investor protection rules and strong legal enforcement); cluster 2 constitutes countries with insider economies (less-developed stock markets, concentrated ownership structures and weak outside investor protection) and strong rule enforcement; and cluster 3 includes countries with insider economies and weak rule enforcement.

Next, we select a cross-sectional sample of 324 listed companies from the European Union, plus Norway and Switzerland, for which we examine detailed impairment-related disclosures in 2010-11. Our selection is again driven by the degree of impairment intensity. We focus on disclosures relating to three classes of non-current non-financial assets: property, plant and equipment (PP&E), intangible assets other than goodwill (hereafter intangible assets) and goodwill. To examine reporting behavior and assess compliance, we use a self-constructed compliance survey instrument based on Ernst & Young illustrative checklists and define the disclosures that we would expect to observe in companies taking asset write-downs. Based on the data we collect from the survey, we develop compliance indices scoring the actual level of disclosure in our sample firms.



We analyze the survey results for 11 specific disclosure areas and highlight examples of differences in compliance attitudes across countries and industries. Building on results from our survey, we also assess whether impairment reporting practices are different between those disclosures that we predict will require uneven levels of management effort to fulfil compliance. We further investigate variations in compliance across the three European country-clusters because prior research suggests that compliance will vary as a result of differences in enforcement mechanisms and preparers' incentives.

Timeliness of recognition of economic losses

- ▶ We rely on a perspective that suggests that conservatism in accounting recognition and remeasurement will lead to companies recognizing bad news in earnings in a more timely fashion than good news. This property of accounting is referred to as asymmetric timeliness of earnings. If, however, the market is well informed, bad news and good news will be equally reflected in a company's stock returns. Therefore, we benchmark recognized impairment losses for non-current non-financial assets against the economic losses reflected in stock market values. We examine the extent to which asymmetric timeliness in recognition of gains and losses varies across the three European country-clusters.
- ▶ Our empirical assessment of the timeliness of impairments during the period following the introduction of IFRS in Europe (2006-11) confirms the asymmetric timeliness of accounting earnings.
- ▶ We also find that asymmetric timeliness is lowest in cluster 3 countries, where the effectiveness of rule enforcement regimes is predicted to be relatively weaker compared with the other two country-clusters.
- ▶ Our results are consistent with enforcement differences across countries leading to variations in the speed of recognition of economic losses as well as differences in disclosure quality.

Highlights from the survey findings

Highlights from the survey evidence on disclosure practices are presented below. This includes an assessment of overall compliance and reporting behavior in 11 selected disclosure areas.

Overall compliance

- ▶ Compliance scores for the three asset classes vary considerably across country-clusters and also across industries.
- ▶ While overall disclosure quality is reasonably high at around 82%, disclosures relating to intangible assets are of somewhat lower quality than found for PP&E and goodwill.
- ▶ Within the three asset classes, disclosure quality can vary significantly across industries.

Accounting policies and judgments

- ▶ Although we find overall high levels of compliance in this area, there is notable variation, with a majority of companies appearing to be box-ticking their way through the compliance process. A smaller number of companies provide disclosures on the nature of and reasoning underlying their policies and judgments.
- ▶ There is excessive use of boilerplate language, with compliance being satisfied through simple restatements of the wording contained in the standards such as IAS 1 and IAS 36.

Estimation uncertainty

- ▶ While there is some variation across countries and industries, in each of the three asset classes, most companies provide adequate disclosures on assumptions and factors influencing estimation uncertainty together with descriptions of their nature.

Changes to past assumptions

- ▶ Despite recent major fluctuations in economic conditions that are expected to be relevant in the remeasurement of assets, we find an absence of meaningful disclosures on revisions to past impairment-related assumptions.



Sensitivity of carrying amounts to changes in methods, assumptions and estimates

- ▶ There is only limited evidence of disclosure in this area in relation to PP&E and intangible assets.
- ▶ Goodwill-related disclosures are low in the cluster of countries where rule enforcement is predicted to be relatively weak.
- ▶ Since sensitivity disclosures are important in understanding the reliability of valuations, inadequacy of disclosures is likely to adversely affect investors' perceptions concerning the reliability of recognized goodwill values and related impairment tests.

Events and circumstances

- ▶ We find substantial variation in disclosures relating to events and circumstances underlying impairment charges, both across countries and across asset classes. In many cases, disclosures are opaque and preparers do not adequately explain the circumstances underlying impairment charges.

Basis for recoverable amount

- ▶ Value in use is the prevailing method for determining recoverable amount across all three asset classes.
- ▶ For a considerable number of cases (36% in PP&E, 38% in intangible assets and 7% in goodwill), there is a lack of transparency in relation to the adopted bases for estimating recoverable amounts.
- ▶ Despite the ongoing economic downturn, there is a lower-than-expected range of disclosures on how market conditions may have influenced factors important in estimating recoverable amounts, where estimates of future cash flows are important.

Impairments as part of segment results

- ▶ Disclosure is generally very limited in this area.
- ▶ The absence of disclosure is partly explained by the presence of a large number of single-segment companies that justify non-disclosure by citing the aggregation criteria of IFRS 8.

Allocation of impaired assets to segments

- ▶ We find various cases of non-compliance in the allocation of impaired assets to segments.
- ▶ An issue we identify in this area is the lack of sufficient disaggregation of assets at the segment level. In most cases, assets are not itemized and are presented solely as aggregate total asset amounts.
- ▶ Lack of clarity in identifying the allocation bases together with opacity as to the components of segments' assets can potentially impair the relevance of disaggregated disclosures.

CGU description and allocation of goodwill to CGUs

- ▶ Cash generating unit (CGU) descriptions are, at best, modest, with many companies failing to provide adequate information.
- ▶ Disclosure of the allocation of goodwill to CGUs is somewhat better, but there are still many cases where compliance is lower than desirable.
- ▶ We find limited disclosures on judgments, estimates and justifications underlying allocation decisions at the CGU level.

Impairment by asset class, segment and CGU

- ▶ Disclosure at this level is generally low and for several countries there is an apparent lack of adequate compliance.
- ▶ The low quality of segment disclosures appears to be driving the low-quality disclosures of CGU impairments by asset class or segment.
- ▶ When considered in conjunction with findings on impairments by segments, the results highlight the potential shortcomings of disaggregated reporting in Europe. This may have implications for compliance in other areas of financial disclosure.



Cash flow projections, growth and discount rates

- ▶ Disclosures on discount rates are found in a majority of companies.
- ▶ Uncertainty surrounding future economic conditions appears to have influenced companies' ability in producing informative disclosures on forecasts of future cash flows and growth rates. These effects appear to be especially pronounced in countries where compliance is predicted to be relatively low (cluster 3 countries).
- ▶ Cash flow projections usually take the form of a single forecast period. In a minority of cases, a range of periods is adopted.
- ▶ Companies generally adopt a single growth rate that does not exceed long-term average growth rates.
- ▶ A large proportion of companies refer to the Weighted Average Cost of Capital (WACC) when explaining the basis for determining the discount rate. However, the adoption of a single discount rate (e.g., a company-wide WACC) that is applied evenly across all CGUs regardless of differences in their risk profiles may be questionable.

Effects of regulatory and institutional regimes

- ▶ Consistent with predictions that stronger regulatory and institutional environments result in higher-quality financial reporting, we find that compliance levels for impairment disclosures are, on average, greater in cluster 1 countries compared with the other two clusters.
- ▶ We find no major difference in compliance levels for impairment disclosures between countries in cluster 2 and cluster 3.
- ▶ These findings suggest that changing accounting standards alone may not be sufficient to ensure uniform financial reporting across Europe due to uneven enforcement.

Effects of firm-specific attributes

- ▶ We examine whether impairment disclosure quality is related to a range of firm-specific factors.
- ▶ Our results suggest that disclosure quality is higher when companies have Big 4 auditors; are in the oil and gas industry; are larger; have higher leverage; and have higher goodwill impairment intensity.

High-effort versus low-effort disclosures

- ▶ To capture the influence of managerial discretion on disclosure behavior, we develop and rely on a novel approach to the analysis of accounting disclosures. We believe that the degree of discretion allowed and judgment needed to satisfy the set of disclosure requirements we study varies. On this basis, we classify impairment disclosures according to whether they are "high-effort" or "low-effort" disclosures. High-effort disclosures call for greater managerial involvement and the use of discretionary reporting choices. Low-effort requirements are usually satisfied by using boilerplate language and exercising a minimum level of judgment.
- ▶ Our analysis confirms that disclosure compliance is generally lower for high-effort impairment disclosures across all three asset classes.

Conclusions

- ▶ Overall, we find that financial reporting quality for impairments of non-current non-financial assets is not uniform across Europe in our sample. There appear to be differences in the speed of recognition of economic losses through impairments across different country-clusters, even though companies are reporting under the same set of financial reporting standards. Countries where enforcement is predicted to be stronger are found to recognize losses in a more timely fashion. There are also significant variations in compliance with disclosure requirements relating to impairments of non-current non-financial assets. Our findings suggest that heterogeneity in country-level institutional features and firm-specific characteristics have a role in explaining these differences.

2. Introduction

The mandatory adoption of International Financial Reporting Standards by listed companies in the European Union (EU) has raised expectations in the minds of many that accounting practices will become increasingly homogeneous and comparable and that the quality of financial information will converge. Advocates argue that a single set of reporting standards ensures that similar transactions are treated in the same way in different countries, thereby facilitating cross-jurisdictional comparisons of financial information and providing more opportunity for investment and diversification (Tweedie, 2001, 2006).

There is ample evidence that supports these assertions. For example, studies find that IFRS adoption leads to improvements in reporting quality (Barth et al., 2008) and the provision of value-relevant information (Horton and Serafeim, 2010). There is also evidence that shows that IFRS can reduce managers' discretion and limit opportunities for earnings management (Ewert and Wagenhofer, 2005).¹ Findings in recent research indicate that IFRS adoption potentially reduces the cost of equity capital (Li, 2010) and increases institutional investment (Florou and Pope, 2012).

An emerging trend in recent IFRS studies is that its outcomes (e.g., changes in reporting quality) cannot be considered in isolation from preparers' incentives and institutional factors. According to this view, reporting practices and outcomes are not solely driven by standards. There are country-level institutions that are as important as standards, if not more so. Examples include the nature of the legal system, type of financial system, prevalent ownership structures and the strength of securities regulation and enforcement regimes.

Research investigating the role of institutions challenges the notion that IFRS will lead to even outcomes across different countries (e.g., Ball et al., 2003). Findings in this strand of the literature also suggest that institutional heterogeneities between settings in which IFRS are adopted can lead to variations in actual reporting practices. This view is corroborated by studies that show that the reasons explaining accounting differences during the pre-IFRS era have continued to prevail under IFRS (Nobes, 2006; Kvaal and Nobes, 2010, 2012).

Equally important in evaluating IFRS reporting practices and outcomes is the influence of firm-specific characteristics (e.g., size, leverage or profitability).² Prior research shows that reporting diversity is related to incentives associated with such characteristics (e.g., Street and Gray, 2002). Therefore, an assessment of disclosure practices and reporting outcomes will need to account for variations in firm-level attributes as well.

Building on these views, we evaluate IFRS impairment reporting and its outcomes in Europe. Our study is motivated by the heightened importance of impairments in light of recent turbulence in financial markets and the ongoing economic downturn resulting from the credit crisis. Although economic instabilities are not, *prima facie*, an impairment indicator, the individual economic events that collectively led to, or stemmed from, the crisis appear to have been relevant in triggering impairment decisions by many European companies. As a recent report by the European Securities and Markets Authority (ESMA) reveals, impairment testing and reporting remain to be of high importance because current economic circumstances generally mean that many IFRS preparers will continue to face potentially impaired assets (ESMA, 2011).

¹ Ewert and Wagenhofer (2005) highlight the importance of the International Accounting Standards Committee's "improvements project" in 2003, which led to the removal of alternative methods from different standards and how this may have reduced managers' discretion and potentially limited their ability to manage earnings. We note, however, that subsequent evidence on change in earnings management following IFRS is inconclusive. For example, while Barth et al. (2008) report on lower earnings management levels, Jeanjean and Stolowy (2008) and more recently, Capkun et al. (2012) find an increase in earnings management from the pre-2005 to the post-2005 period within different classes of IFRS adopters.

² Consistent with practice in academic papers, in this report we use the terms "company" and "firm" interchangeably to refer to the business entities producing financial statements in which we have an interest, i.e., European listed companies. Generally, no significance should be attached to the choice of one term in preference to another, although the shorter "firm" is more convenient for purposes of tabulating results. When we use the term "entity," it is in the context of use of this term by the IASB in its standards when referring to the reporting entity. At times, we also refer to professional accounting firms and audit firms.



At times of economic uncertainty and persistent slowdown in financial markets and the real economy, it is likely that assets may generate lower cash flows than previously expected. This could, in turn, increase the likelihood of booking impairment charges as carrying amounts may not be fully recoverable. As such, the crisis may have acted as the triggering event for impairment testing and the recognition of write-downs. This view is supported by evidence on the number of entities that reassessed their impairment testing procedures, models and assumptions following the rise of financial instabilities in Europe and beyond (Ernst & Young, 2010).

Our study pursues two main objectives. Initially, we provide some broad evidence on the incidence and timeliness of impairments for a sample of 4,474 European companies during the post-IFRS adoption era (2006-11). Given the discretion that reporting standards offer in terms of managing the amount and timing of impairments, we believe that it is relevant to assess the speed at which economic losses are recognized in accounting earnings. We also examine the role of country-level institutions in explaining differences in the timeliness of impairments across European countries.

For a sample comprising 324 companies, we then assess the quality of impairment disclosures in 2010-11 for three classes of non-current non-financial assets: PP&E, intangible assets and goodwill. Our evaluation is based on the extent to which impairment disclosures conform to the requirements of IFRS. We examine those areas where compliance is lacking or weak and seek to provide explanations for such observations. Based on our findings on actual compliance, we establish a model that includes country-level institutional factors as well as firm-specific attributes that could explain disclosure behavior. Finally, we analyze reporting attitudes through the lens of a novel classification of accounting requirements. Our analysis rests on identifying two sets of reporting requirements: high-effort versus low-effort requirements. Our conjecture is that there are meaningful differences in disclosure quality between these two sets of requirements.

To assess the timeliness of impairments, we use two constructs. First, we rely on the notion of asymmetric timeliness and adopt a measure that is based on the explanatory power of a reverse regression model of earnings on stock returns. Next, we examine variations in the speed of impairment recognition in earnings across European countries with different institutional features. We capture such differences by adopting a classification that groups countries into three clusters: cluster 1 includes countries with outsider economies and strong enforcement; cluster 2 constitutes countries with insider economies and stronger enforcement; and cluster 3 includes countries with insider economies and weaker enforcement.

To evaluate IFRS disclosures, we conduct a survey of European companies' impairment reporting practices. Our emphasis is on evaluating disclosures in eleven distinct areas and the degree of their congruence with the requirements of IFRS. To do so, we develop a compliance survey instrument and rely on unweighted and partial indices to summarize our findings. We study differences in compliance across countries and industries and identify country- and firm-level forces that explain observed disclosure attitudes. Evidence from our survey of reporting practices contributes to proposals for improved impairment reporting in Europe.

The results we find on the timeliness of impairments are highly consistent with predictions of asymmetric timeliness. We also find evidence that confirms our expectations on the role of institutional factors in shaping the outcomes of financial reporting. The findings generally indicate that asymmetric timeliness is lowest in cluster 3 countries where the effectiveness of institutions and enforcement regimes is predicted to be relatively weaker compared with the other two country-clusters. This is consistent with enforcement differences across countries leading to variations in the speed of recognition of economic losses as well as disparities in the level of disclosure quality.

Findings from our survey of impairment disclosures reveal variations in overall compliance levels across European countries and different industries for the three asset classes. Detailed examination of different disclosures indicates that a majority of companies appear to be box-ticking their way through the compliance process. This observation is more pronounced in those areas where compliance is satisfied through the use of boilerplate language.

Consistent with our conjectures, we document that companies domiciled in stronger institutional settings exhibit higher reporting quality. More specifically, compliance is generally higher in cluster 1 countries compared with the other two country-clusters. No meaningful difference in compliance levels is found between companies classified in cluster 2 and cluster 3. This result is consistent with the important role that complementary institutional forces play in ensuring the adequacy of IFRS implementation.

Using an automatic econometric model selection algorithm, we identify the determinants of compliance for our sample companies. The selected significant variables include audit quality, type of industry, leverage, intensity of goodwill impairments, firm size and being domiciled in a cluster 1 country. The results highlight the influence of large audit firms and strong institutions in encouraging IFRS compliance. They also reveal the importance of firm-specific features in explaining how actual reporting practices are shaped. Our examination of the impact of judgment and effort on IFRS compliance also indicates that, in gauging overall disclosure quality, low compliance with high-effort requirements are generally masked by high compliance with low-effort disclosures across the three asset classes.

The remainder of the study is organized as follows. In section 3, we present an overview of impairment reporting requirements under IFRS. Section 4 outlines the background literature motivating our study. This section also defines our propositions with respect to the timeliness of impairment losses and the quality of impairment disclosures in Europe. In section 5, we present descriptive results for our main sample and some empirical findings from our study of the timeliness of impairment losses. Section 6 highlights evidence from our survey of listed companies' compliance levels. We identify some of the more important factors shaping compliance and present our findings on differences in reporting quality between high-effort and low-effort disclosures. In section 7, we offer some broad recommendations for future improvements in impairment reporting in Europe.



3. Impairment reporting requirements under IFRS

Objectives underlying impairment reporting

An objective of impairment recognition is to improve the usefulness of financial statement information by reporting losses in a timely manner. Information on asset impairments should be relevant in evaluating the operating capacity and risks of a firm, and should assist investors in better approximating economic values of assets and in estimating the returns on their investments.

Under IFRS, the relevant requirements governing impairment reporting for non-current non-financial assets are set out mainly in IAS 36 Impairment of Assets together with certain asset-specific disclosure requirements in IAS 16 Property, Plant and Equipment, IAS 38 Intangible Assets and IFRS 3 Business Combinations. In this section, we provide a brief overview of the impairment-related concepts and implementation issues for each of these standards. Subsequently, we build on this review to develop our compliance survey instrument.

Asset impairments under IAS 36

The objective of IAS 36 is to prescribe the procedures that an entity applies to ensure that its assets are carried at no more than their recoverable amount (IAS 36.1). Underlying the standard's prescriptions is a set of key definitions that include the following (IAS 36.6):

- ▶ **Carrying amount:** the amount at which an asset is recognized after deducting any accumulated depreciation (amortization) and accumulated impairment losses thereon.
- ▶ **Cash-generating unit (CGU):** the smallest identifiable group of assets that generates cash inflows that are largely independent of the cash inflows from other assets or groups of assets.
- ▶ **Costs of disposal:** incremental costs directly attributable to the disposal of an asset or CGU, excluding finance costs and income tax expense.
- ▶ **Impairment loss:** the amount by which the carrying amount of an asset or CGU exceeds its recoverable amount.
- ▶ **Fair value:** the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date.
- ▶ **Recoverable amount:** the recoverable amount of an asset or a CGU is the higher of its fair value less costs of disposal and its value in use.
- ▶ **Value in use:** the discounted present value of the future cash flows expected to be derived from an asset or CGU.

Timing and indicators of impairment

According to IAS 36, an entity is required to assess, at least at each reporting date, whether there is an indication that an asset may be impaired. If such indications are present, an impairment test should be undertaken. Although observing an indicator does not by itself lead to the recognition of a write-down, it is often considered as the trigger for conducting an impairment test.³

To establish guidelines on identifying triggering events, the standard requires consideration of both external sources of information (e.g., unexpected decline in an asset's market value, increases in interest rates, or market capitalization being lower than the carrying amount of net assets⁴) and internal sources of information (e.g., evidence on physical damage or obsolescence, discontinued or restructured operations, or a decline in economic performance) (IAS 36.12). If any such indication exists, the entity is required to estimate the recoverable amount of the asset (IAS 36.9).

For indefinite-life intangibles, intangibles not yet available for use and for goodwill acquired in a business combination, the standard requires that an impairment test is carried out annually irrespective of whether or not any indication of impairment exists (IAS 36.10).

Recoverable amount: fair value less costs of disposal versus value in use

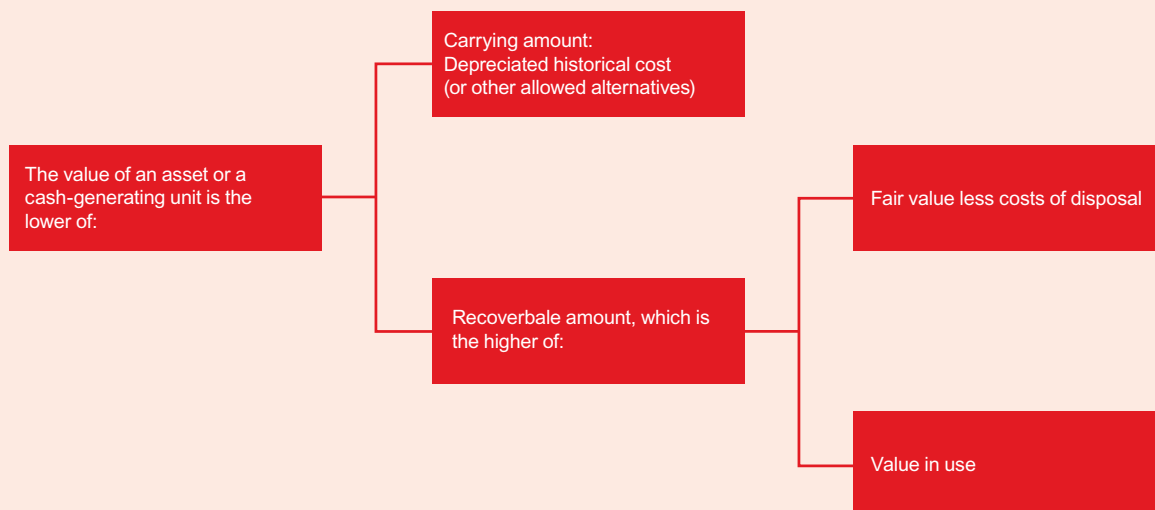
Recoverable amount is the higher of: (i) an asset's (or a CGU's) fair value less costs of disposal and its value in use (IAS 36.18). To measure impairment, an asset's (or a CGU's) carrying amount is compared with its recoverable amount. The impairment loss is the amount by which the carrying amount of the asset (or CGU) exceeds its recoverable amount (IAS 36.6, IAS 36.8). The process of measuring impairment is illustrated in Figure 3.1.

³From this perspective, impairments can be viewed as an example of how conditional, news-dependent conservatism manifests itself in accounting practice. This is in contrast with unconditional, news-independent conservatism that is an inherent component of the financial reporting system.

⁴Higher book-to-market (BTM) ratios may suggest that the capital market is accounting for losses through alternative sources of information that are yet to be captured through the financial reporting system. It is important to note, however, that just as IFRS book values may not be comparable among different European countries due to differences in compliance, share prices may not be equally informative across European countries as a result of diversity in the capital market infrastructure and the speed at which information is impounded in prices.



Figure 3.1 - Impairment measurement under IAS 36



Recoverable amount is determined for individual assets. If, however, the asset does not independently generate cash inflows, recoverable amount is determined for the cash-generating unit to which the asset belongs (IAS 36.22). The two elements in measuring recoverable amount are fair value less costs of disposal (FVLCD) and value in use (VIU). It may be possible to measure FVLCD, even if there is not a quoted price in an active market for an identical asset (IAS 36.20). However, in the absence of a basis for making a reliable estimate of the price at which an orderly transaction to sell the asset would take place between market participants, measuring FVLCD may not be possible. In this case, the entity may use the asset's VIU as its recoverable amount.

Five elements should be reflected in an asset's VIU (IAS 36.30). The first two elements relate to net cash flow projections and require estimation of the amount and timing of expected future cash flows and changes in those projections. Cash flow projections should be based on reasonable assumptions that represent management's best estimate of the range of economic conditions that will exist over the remaining useful life of the asset. These projections are usually produced on the basis of the most recent budgets/forecasts approved by management. Projections beyond the period covered by the most recent budgets/forecasts should be

based on extrapolations using a steady or declining growth rate, unless an increasing rate can be justified. If a growth rate is assumed, it should not exceed the long-term average growth rate for the products, industries, or country or countries in which the entity operates, unless a higher rate can be justified (IAS 36.33).

The next three elements relate to the discount rate that is applied to the expected future cash flows. These are the time value of money, the price for bearing the asset's inherent uncertainty and other factors that market participants reflect in pricing future cash flows.⁵ To measure the present value of projected cash flows, the focus is on capturing risks associated with the asset; the riskier the asset, the higher the discount rate and the lower the present value of future cash flows. The standard requires the use of a pre-tax discount rate that reflects current market assessments of the time value of money as well as asset-specific risks (IAS 36.55). The selected discount rate should reflect investors' required rate of return if they were to choose an investment that would generate similar cash flows (IAS 36.56).

⁵Guidance in IAS 36 refers to two methods that are used in practice to determine the present value of projected cash flows: the traditional approach and the expected cash flow approach where, under the former, a single set of estimated cash flows and a single discount rate are used, while under the latter approach, different probabilities are applied to an expected range of cash flow estimates (see: IAS 36.A4-A-14).



However, in practice, it may not be possible to identify an asset-specific discount rate. In these circumstances, when a market-based rate is not directly observable, surrogates can be used by taking into account: (a) the entity's WACC using the Capital Asset Pricing Model ; (b) the entity's incremental borrowing rate; (c) other market borrowing rates; and (d) key risk factors such as country risk, currency risk, price risk and cash flow risk (IAS 36.57 and IAS 36.A16-A18).

Recognition and measurement of an impairment loss

When the carrying amount of an asset exceeds its recoverable amount, the excess is recognized as an impairment loss (IAS 36.59). When the carrying amount is measured on the basis of depreciated historical cost, the impairment loss is recognized as an expense immediately in profit or loss. If, however, the asset is measured under an accepted alternative basis (e.g., the revaluation model of IAS 16 or IAS 38), the impairment loss is treated as a reduction in the asset's revaluation surplus and recognized in other comprehensive income (IAS 36.60-61). The asset's revised impairment-adjusted carrying amount will be the basis for future periods' depreciation (amortization).⁶

Cash-generating units and goodwill impairment

In cases when it is not possible to estimate the recoverable amount of an individual asset, recoverable amount will be determined for the CGU to which the asset belongs (IAS 36.66). Identifying an asset's CGU can require judgment by management. The principal characteristic of a CGU is the ability of an asset (groups of assets) to independently generate cash inflows. In establishing this, various factors are considered, including how management monitors operations or how management makes decisions about continuing or disposing of assets and operations (IAS 36.69).

An important aspect of identifying CGUs relates to goodwill accounting. Under IFRS 3 Business Combinations, goodwill arising from business combinations is subject to annual impairment tests in accordance with IAS 36 (IFRS 3.B69d).⁷ For purposes of impairment testing, acquired goodwill is, from the acquisition date, allocated to each of the acquirer's CGUs (or groups of CGUs) that are expected to benefit from the acquisition, irrespective of whether other acquired assets or liabilities are assigned to those CGUs.

The requirement to allocate goodwill stems from the fact that goodwill does not generate cash flows independently from other assets or groups of assets, and often contributes to the cash flows of multiple CGUs. But goodwill sometimes cannot be allocated on a non-arbitrary basis to individual CGUs. In such cases, goodwill is tested for impairment at the lowest level within the entity at which it is monitored for internal management purposes and which is not larger than an operating segment defined under IFRS 8 Operating Segments before aggregation (IAS 36.80-81).

A CGU to which goodwill has been allocated should be tested for impairment on an annual basis, and whenever there is an indication that the unit may be impaired. Impairment is tested by comparing the carrying amount of the CGU, including goodwill, with its recoverable amount. If the carrying amount of the CGU exceeds its recoverable amount, the entity should recognize the difference as an impairment loss (IAS 36.90). Although the standard indicates that the annual impairment test for CGUs may be performed at any time during an annual period, to ensure consistency in entities' inter-period reporting practices, the test is to be performed at the same time every year (IAS 36.96). Any impairment loss is allocated first, to reduce the carrying amount of goodwill allocated to the CGU. If the carrying amount of goodwill allocated to the CGU is written off as a result of the loss, any remaining impairment is then allocated to the other assets of the CGU pro rata on the basis of their carrying amount (IAS 36.104). Figure 3.2 presents a summary overview of the impairment determination process for both individual assets and cash-generating units based on IAS 36.

Selected disclosure requirements

IAS 36 outlines required disclosures relating to impairment tests and recognized losses. We focus on a number of disclosure items in our compliance survey instrument. First, the standard requires the disclosure of the amount of impairment losses recognized in profit or loss and in other comprehensive income during the period (IAS 36.126). To identify how impairment losses relate to operating segments reported under IFRS 8, the standard also requires the provision, for each reportable segment, of information on the amount of impairment losses recognized in profit or loss and in other comprehensive income during the period (IAS 36.129). IAS 36 then lists a package of disclosures that should be provided for each material impairment loss recognized or reversed for an asset or a CGU (IAS 36.130). These include:

⁶ IAS 36 outlines the accounting treatment for reversals of previously recognized impairments following favorable changes in estimates used to determine an asset's recoverable amount (except for goodwill).

⁷ The scope of our survey of impairment reporting practices in Europe, however, does not encompass instances of reversals.

⁸ The issuance of IFRS 3 in 2004, which prohibits the pooling of interests method of accounting for business combinations and, at the same time, abolishes goodwill amortization, was the outcome of an IASB-FASB joint project and is often viewed as being complemented by simultaneous revisions to IAS 36 that led to the introduction of annual impairment testing rules for goodwill arising from business combinations.



- ▶ The events that led to the recognition or reversal of the impairment loss
- ▶ The amount of the impairment loss recognized or reversed
- ▶ For an individual asset: (i) the nature of the asset and (ii) the reportable segment to which the asset belongs
- ▶ For a cash-generating unit: (i) a description of the CGU, (ii) the amount of impairment loss recognized or reversed by class of assets and by reportable segment, and (iii) if the aggregation of assets for identifying the CGU has changed, a description of the current and former way of aggregation and the reasons for the change
- ▶ Whether the recoverable amount of the asset or CGU is its FVLCD or its VIU
- ▶ If recoverable amount is FVLCD, the basis used for its determination
- ▶ If recoverable amount is VIU, the discount rate(s) used in the current and previous estimates (if any)

It is possible that the initial allocation of acquired goodwill may not be complete by the end of the reporting period in which the business combination took place. In such situations, the entity must complete the initial allocation before the end of the first post-acquisition reporting period (IAS 36.84). For CGU disclosure purposes, if, at the end of a reporting period, any portion of goodwill is not allocated to a CGU (group of CGUs), the amount of, and reasons for, unallocated goodwill should be disclosed (IAS 36.133).

Further asset- and CGU-related impairment disclosures are outlined in IAS 36. For instance, entities are encouraged to disclose assumptions used to determine the recoverable amount during the period (IAS 36.132). More importantly, when the carrying amount of goodwill or intangible assets with indefinite useful lives allocated to a CGU (group of CGUs) is significant, IAS 36 requires the provision of information on estimates used in determining the recoverable amount (IAS 36.134), including the following:

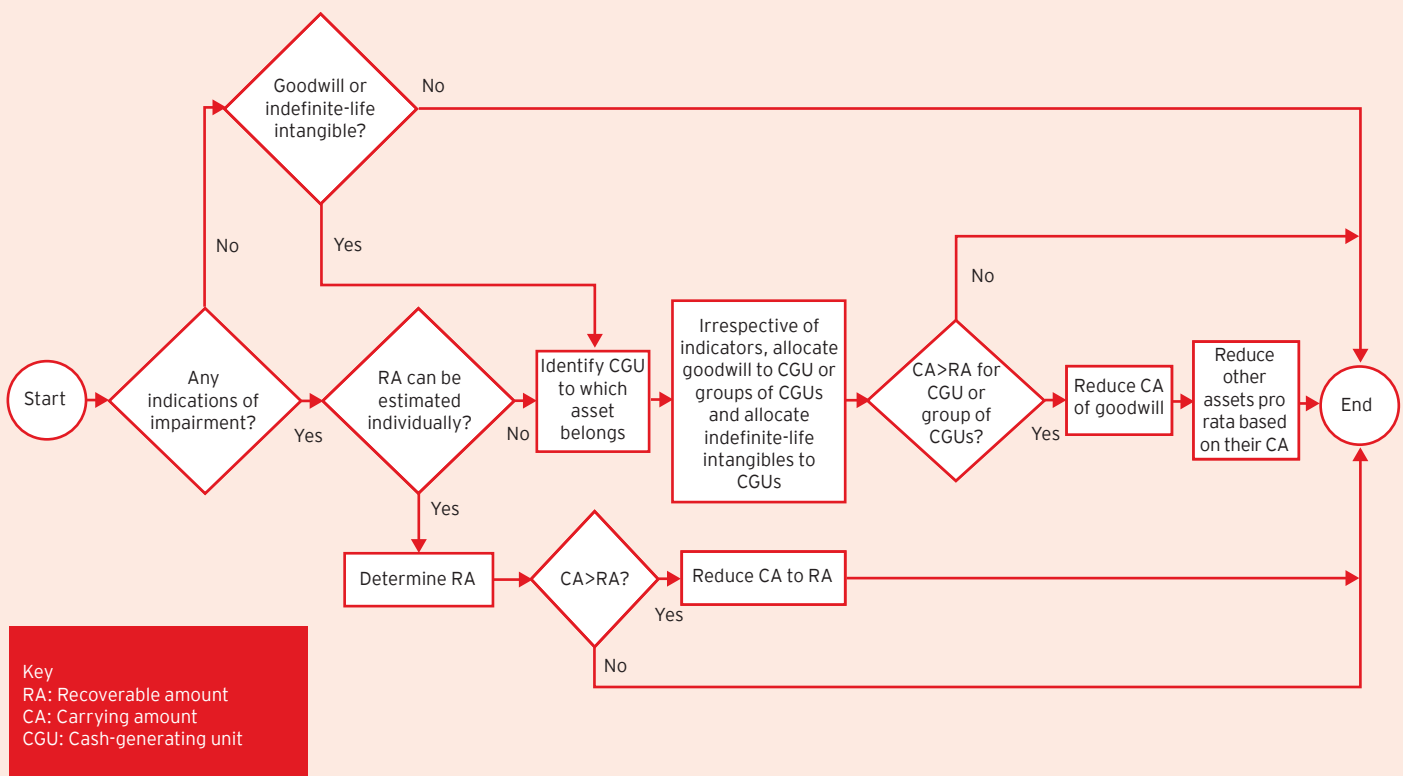
- ▶ The carrying amount of goodwill allocated to the CGU (group of CGUs)
- ▶ The carrying amount of intangible assets with indefinite useful lives allocated to the CGU (group of CGUs)
- ▶ The basis for the CGU's (group of CGUs') recoverable amount (i.e., VIU or FVLCD)

- ▶ If the CGU's (group of CGUs') recoverable amount is based on VIU: (i) a description of key assumptions relating to cash flow projections to which recoverable amount is most sensitive, (ii) a description of management's approach to determining values assigned to each key assumption, (iii) the projection period for future cash flows and reasons for why a period greater than five years may have been used, (iv) the growth rate used to extrapolate cash flow projections beyond the period covered by the most recent budgets or forecasts, and the justification for using a rate that exceeds the long-term average growth rate and (v) the discount rate(s) applied
- ▶ If the CGU's (group of CGUs') recoverable amount is based on FVLCD, the methodology used to determine FVLCD; if FVLCD is not determined using an observable quoted market price, the entity must disclose: (i) a description of each key assumption used in determining FVLCD to which recoverable amount is most sensitive, (ii) a description of management's approach to determining the values assigned to each key assumption; if FVLCD is determined using discounted cash flow projections, the entity must disclose: (iii) the period over which management has projected cash flows, (iv) the growth rate used to extrapolate cash flow projections and (v) the discount rate(s) applied to the cash flow projections
- ▶ If a reasonably possible change in a key assumption would cause a CGU's (group of CGUs') carrying amount to exceed recoverable amount: (i) the amount by which the CGU's (group of CGUs') recoverable amount exceeds its carrying amount, (ii) the value assigned to the assumption and (iii) the amount by which the value assigned to the assumption must change for the CGU's (group of CGUs') recoverable amount to be equal to its carrying amount

If, on the other hand, some or all of the carrying amount of goodwill or indefinite-life intangible assets is allocated across multiple CGUs (groups of CGUs) and the amount so allocated is not significant, this should also be disclosed. In addition, if the recoverable amounts of any of those CGUs (groups of CGUs) are based on the same key assumption(s) and the aggregate carrying amount of goodwill or indefinite-life intangible assets allocated to them is significant in comparison with the entity's total carrying amount of goodwill or intangible assets with indefinite useful lives, that fact should be disclosed together with the following information (IAS 36.135):

- ▶ The aggregate carrying amount of goodwill allocated to those CGUs (groups of CGUs)
- ▶ The aggregate carrying amount of intangible assets with indefinite useful lives allocated to those CGUs (groups of CGUs)
- ▶ A description of the key assumptions
- ▶ A description of management's approach to determining the values assigned to the key assumptions
- ▶ If a reasonably possible change in the key assumptions would cause the aggregate of the CGUs' (groups of CGUs)' carrying amounts to exceed the aggregate of their recoverable amounts: (i) the amount by which the aggregate of the CGUs' (groups of CGUs)' recoverable amounts exceeds the aggregate of their carrying amounts, (ii) the values assigned to the key assumptions, (iii) the amount by which the values assigned to the key assumptions must change for the aggregate of the CGUs' (groups of CGUs)' recoverable amounts to be equal to the aggregate of their carrying amounts

Figure 3.2 - Overview of impairment recognition under IAS 36



Source: Ernst & Young (2011)



Asset-specific impairment disclosure requirements

PP&E

IAS 16 delineates certain impairment-related disclosures for PP&E.

Among the required disclosures are the following (IAS 16.73):

- ▶ The measurement bases used for determining the gross carrying amount
- ▶ The depreciation methods used
- ▶ The useful lives or the depreciation rates used
- ▶ The gross carrying amount and the accumulated depreciation (aggregated with accumulated impairment losses) at the beginning and end of the period
- ▶ A reconciliation of the carrying amount at the beginning and end of the period showing: (i) additions, (ii) assets classified as held for sale or included in a disposal group, (iii) acquisitions through business combinations, (iv) increases or decreases resulting from revaluations and from impairment losses recognized or reversed in other comprehensive income in accordance with IAS 36, (v) impairment losses recognized in profit or loss in accordance with IAS 36, (vi) impairment losses reversed in profit or loss in accordance with IAS 36, (vii) depreciation, (viii) the net exchange differences arising on the translation of the financial statements from the functional currency into a different presentation currency and (ix) other changes.

Intangible assets

IAS 38 defines the recognition and measurement requirements of both finite-life and indefinite-life intangibles. The standard also outlines the disclosures that an entity should provide for each class of intangible assets. Included in these disclosures are (IAS 38.118):

- ▶ The gross carrying amount and any accumulated amortization at the beginning and at the end of the period
- ▶ The line item(s) of the statement of comprehensive income in which any amortization of intangible assets is included

- ▶ A reconciliation of the carrying amount at the beginning and end of the period, which should show: (i) additions, indicating separately those from internal development, those acquired separately and those acquired through business combinations, (ii) assets classified as held for sale or included in a disposal group classified as held for sale, (iii) impairment losses recognized in profit or loss during the period in accordance with IAS 36 (if any), (iv) impairment losses reversed in profit or loss during the period in accordance with IAS 36 (if any), (v) any amortization recognized during the period and (vi) other changes in the carrying amount during the period

Goodwill

IFRS 3 requires the disclosure of a reconciliation of the carrying amount of goodwill at the beginning and end of the reporting period (IFRS 3.B67d). This reconciliation should show separately the gross amount and accumulated impairment loss at the beginning of the reporting period together with any additional goodwill recognized during the reporting period. Goodwill that is included in a disposal group should be classified as held for sale in accordance with IFRS 5 Non-current Assets Held for Sale and Discontinued Operations, provided that, on acquisition, it meets the relevant criteria. Impairment losses recognized during the reporting period in accordance with IAS 36, together with information about the recoverable amount and impairment of goodwill, any other changes in the carrying amount during the reporting period as well as the gross amount and accumulated impairment losses at the end of the reporting period, should also be disclosed.

Summary

When the valuation of assets requires managerial judgment and assumptions, there is a risk that recognized balance sheet amounts will be viewed as unreliable. To control this risk, IFRS require periodic remeasurement of asset values and the recognition of impairment charges when economic values have fallen below recognized value. IFRS also require or encourage extensive disclosures concerning not only impairment charges and their allocation within the business, but also a broad range of disclosures relating to the judgments and assumptions underlying accounting valuations. These disclosures are potentially critical for investors interested in assessing the reliability of key balance sheet numbers.⁸

⁸ The Appendix presents selected excerpts from the annual reports of three European listed companies and their impairment-related disclosures for PP&E, intangible assets (other than goodwill) and goodwill.

4. Lessons from accounting research

Standards versus institutions: how are reporting practices and outcomes shaped?

Academic research has identified two factors that will determine whether benefits will follow IFRS adoption. On the one hand, compared to domestic accounting standards in many countries, IFRS comprise more soundly based recognition and measurement rules, and generally require greater transparency in financial reporting. Thus, IFRS offer the prospect of more relevant information being communicated to investors. On the other hand, research now recognizes that the de facto quality of financial reporting depends not only on standards but also on the incentives for companies to rigorously apply those standards, and for auditors and national enforcement bodies to enforce them. Reporting incentives have been found to be associated with a range of legal and economic institutional features, including the type of legal origin (code law versus common law), the strength of judicial efficiency and investor protection rules, corporate ownership structures (concentrated versus dispersed), the nature of the financial system (bank-based versus market-based) and the quality of securities regulation.

There is growing evidence that indicates that favorable financial reporting outcomes are generally present in those jurisdictions where national institutions provide incentives for transparency. For example, Leuz et al. (2003) and Burgstahler et al. (2006) show that the litigation and enforcement mechanisms of common law countries contribute to higher earnings quality. Relevant to our study on impairment reporting, Bushman and Piotroski (2006) report that high-quality judicial systems induce the timely reporting of bad news and that strong enforcement slows the recognition of good news. Similarly, Hung (2000) provides evidence on how investor protection rules increase the value relevance of earnings. The findings of Fan and Wong (2002) also indicate that ownership structures are a key determinant of overall financial reporting quality.

Building on these findings, more recent studies document that the benefits of IFRS adoption are realized mainly in countries with effective institutions. For example, Hail et al. (2010) and Schleicher et al. (2010) report that countries with strong equity-outsider dominant financial systems and those with strong credit-insider dominant financial systems have different reporting regimes and respond differently to IFRS adoption. Li (2010) finds that IFRS adoption effects on the cost of equity depend on the strength of enforcement. The findings of Garcia Osma and Pope (2011) reveal that the first-time implementation of IFRS is not even around the world. They report that IFRS earnings quality is higher in countries with stronger investor protection rules and stricter enforcement mechanisms. Evidence in Brown et al. (2012) also suggests that IFRS-based analysts' forecasts are more accurate and less dispersed only when enforcement is more developed. Florou and Pope (2012) find that the effects of IFRS on changes in institutional ownership apply only to those countries with strict enforcement, low corruption and low earnings management. Isidro and Raonic (2012) add to these findings by showing that improved reporting quality following IFRS is observed only in countries with sophisticated capital markets and strong institutions.⁹

Emphasising the role of institutions, Leuz et al. (2003), Leuz (2010) and Wysocki (2011) point out that there are interdependencies between elements that constitute an institutional setting; there are "institutional bundles" that are likely to be observed together. One way of grouping countries according to institutional type is provided by Leuz (2010), who identifies three country-clusters based on the nature of securities regulation, investor protection rules, legal enforcement, disclosure and transparency of reporting practices. In analyzing the timeliness of impairments and European companies' impairment disclosure practices, we follow Leuz's classification by identifying European countries in three clusters: (i) outsider economies with strong outsider protection and enforcement (cluster 1), (ii) insider economies with strong enforcement (cluster 2) and (iii) insider economies with weak enforcement (cluster 3).¹⁰

To the extent that the institutional context matters for the quality of IFRS implementation, including the timeliness of recognition of losses and the quality of mandated disclosures surrounding impairments, we would expect differences to be observed across the three country-clusters.

⁹ An implicit assumption in most, if not all, studies so far on the outcomes of IFRS is that preparers' level of actual compliance is even across all reporting jurisdictions.

¹⁰ Given the role of institutional factors in shaping reporting quality, Leuz (2010) documents that disclosure quality is greater and earnings are generally more informative in cluster 1 relative to cluster 2, and in cluster 2 relative to cluster 3.



Timeliness of impairments

Timeliness, as one measure of financial reporting quality, is relevant to the issue of impairment reporting. According to the IASB, timeliness means having information available to decision-makers in time to be capable of influencing their decisions (Framework QC.29). Therefore, in the context of IFRS impairments for non-current non-financial assets, timeliness relates to the speed with which changes in the economic values of assets are recognized and any impairment losses are reflected in earnings.

Published research to date on impairments is generally limited to studies based on US data addressing managers' reporting incentives and reporting outcomes. Riedl (2004), for example, reports that SFAS 121 leads to higher associations between long-lived asset write-offs and "big bath" reporting behavior. In this context, big bath reporting more likely reflects on managers' opportunistic behavior as opposed to the provision of private information about underlying performance. Beatty and Weber (2006) arrive at similar conclusions and find that both contracting and market incentives shape companies' impairment accounting choices. They show that equity market concerns affect companies' preferences for above-the-line versus below-the-line accounting treatments, and that incentives related to debt contracting, management bonuses, executive turnover and exchange delisting affect firm's decisions to manage the timing of impairment recognition.

In a study of the outcomes of SFAS 142 impairments for goodwill and other intangible assets, Chen et al. (2008) use a returns-based model and find that, although the standard improves the timeliness of impairments, earnings still lag stock market returns in reflecting the effects of impairments. Bens et al. (2011) examine the information content of SFAS 142 goodwill impairments. They compare actual write-offs and expected (model) write-offs and find a significant negative market reaction to the unexpected component of reported impairments. Lee (2011), on the other hand, reports on the favorable effects of SFAS 142 on the ability of goodwill to predict future cash flows. Contrary to earlier findings, Lee's study shows that the US standard does not lead to opportunistic abuse of reporting discretion and that it improves the representational faithfulness of goodwill numbers.

Impairments of non-current assets are undoubtedly a challenging aspect of financial reporting and a source of potential loss of representational faithfulness. Impairment accounting requires assessments of future cash flows deriving from an asset and, as a result, judgments and estimates are of central importance. As Nobes (2011) notes, identifying the indicators that would lead to the recognition of impairments is essentially a matter of judgment. We cannot rule out the possibility that the degree of prudence exercised in judgments and estimates varies across companies and jurisdictions; for instance, due to historical tendencies toward more conservative or liberal accounting practices. Hence, there is potential for cross-country differences in the timing and amounts of impairment losses recognized under IAS 36.¹¹

We investigate the timeliness of bad news recognition and impairments in the post-2005 era using a test of the asymmetric timeliness of earnings (Basu, 1997; Pope and Walker, 1999; Ball et al., 2000; Raonic et al., 2004). This regression-based test estimates the extent to which economic gains and losses, measured based on positive and negative stock returns respectively, are reflected in accounting earnings.¹² It captures the relative speeds of recognition of good news and bad news in earnings and in earnings components. Our emphasis is on examining differences in the speed of recognition of bad news across the three clusters of European countries based on the strength of their underlying institutions discussed earlier. We predict that companies in countries with stronger institutions will recognize bad news and impairments in a more-timely manner.

¹¹ Giner and Rees (2001) provide a comparison of differences in conservative measurements under domestic financial reporting standards in selected European countries during the pre-IFRS era.

¹² An assumption of this test is that in a well-functioning, efficient market, stock returns capture all public information about a firm's asset values in an unbiased way.



Compliance with IFRS reporting requirements

Accounting compliance research evaluates and seeks to explain differences between actual financial reporting practices and financial reporting regulation. Perceived differences in compliance incentives underpin concerns that the mandated adoption of IFRS may not result in harmonized accounting practices (Holthausen, 2009; Pope and McLeay, 2011). Researchers have also predicted that IFRS reporting outcomes will be uneven because compliance incentives vary across companies, and especially across reporting jurisdictions.

Cross-country differences in compliance are likely to result from differences in the institutional context of financial reporting. Nobes (2006) investigates the persistence of accounting differences across EU countries and argues that the motives explaining reporting variations prior to mandated IFRS adoption are still present and effective in the IFRS era and are a potential impediment to comparability.¹³ Evidence in Kvaal and Nobes (2010) supports this view and shows that reporting practices vary across countries claiming to have adopted IFRS. Cascino and Gassen (2011) arrive at similar conclusions. They find that there are differences in IFRS compliance, with companies exhibiting behavior that is consistent with their pre-IFRS national practices.

We examine non-current non-financial asset impairment disclosures by European companies. Building on the Leuz (2010) global classification of institutional clusters, we predict that companies in stronger institutional settings are likely to manifest higher levels of disclosure compliance with IFRS impairment reporting requirements.

The role of judgment and managerial effort

Proponents of IFRS contend that the IASB has taken steps to reduce the range of acceptable accounting treatments and to establish rules that better reflect economic position and financial performance. Limiting accounting alternatives can increase reporting quality by eliminating opportunities to manage earnings and balance sheet amounts. As Ewert and Wagenhofer (2005) and Barth et al. (2008) show, tightening accounting standards can result in earnings numbers that better reflect a firm's underlying economics. This, in turn, leads to information that can be more relevant to investors in decision-making.

A counter argument, however, suggests that for many countries, introduction of IFRS has involved a shift from a rules-based system to a principles-based system requiring frequent judgment and use of private information on the part of management (Jeanjean and Stolowy, 2008). Critics argue that the need to apply judgment and discretion presents managers with opportunities to pursue ulterior reporting motives by managing earnings (and other accounting amounts) in ways that reduce their information value to investors. Van Tendeloo and Vanstraelen (2005) report evidence consistent with this prediction. They find that voluntary IFRS adopters in Germany have higher levels of earnings management than companies reporting under German accounting standards.

¹³Nobes (2006) discusses the opportunities for the emergence of differences under IFRS and concludes that incentives for exploiting such opportunities, combined with political pressure from lobbyists on regulators to affect the interpretations of IFRS, can have serious implications for the comparability of financial statements.



There is little doubt that the adequate implementation of IAS 36 can be a step toward reflecting the economic value of a firm's assets. But the standard has been criticized for being rooted in somewhat impractical requirements that call for subjective judgments and estimates that are unlikely to be verifiable. According to Watts (2003) and Ramanna and Watts (2012), unverifiable estimates can lead to inflated net assets, aggressively managed earnings and impairment decisions that essentially serve the purpose of managing earnings.¹⁴ Under such conditions, we would expect transparency to be low. Consistent with this view, a recent report by the ESMA expresses concern about the quality of disclosures on assumptions and judgments underlying impairments of non-financial assets (ESMA, 2011). Among the problem areas identified in the report are the lack of adequate justification for business plans and discount rates, absence of meaningful disclosures on impairment triggering events, excessive use of boilerplate language and the non-disclosure of information on assumptions used in determining recoverable amounts.

Evidence from IFRS reporting jurisdictions confirms implementation issues such as those noted in ESMA (2011). For example, Petersen and Plenborg (2010) report on inconsistencies in the implementation of IAS 36 especially in relation to how companies define a CGU and develop estimates for recoverable amounts. Carlin and Finch (2009) explore how the discretion in selecting a discount rate can be used to opportunistically avoid or manage the timing of impairment losses, to the detriment of transparency, comparability and decision usefulness. Their study finds evidence consistent with this discretionary behavior on the part of financial statement preparers in Australia.

One hitherto neglected aspect of compliance research relates to how difficult or costly it is for companies to apply certain requirements in a reporting standard. We predict that compliance is likely to be lower as application costs increase. We also conjecture that costs increase when companies are required to exercise discretion and to then make disclosures in support of their discretionary decisions. For example, if a standard were to specify a fixed discount rate to be used in valuing future cash flows (e.g., 10%), this is less costly to a firm than being required to estimate an appropriate rate and justify the choice in the form of a disclosure note. Costs can arise in undertaking the analysis to support a decision, and in developing a justification and responding to questions and challenges from users. Whenever management judgment is required in reporting decisions, such costs are potentially incurred. We describe such disclosure requirements as "high effort." We predict and test whether compliance is lower for relatively high-effort disclosures.

We classify disclosure requirements into those that require high levels of effort and judgment (high-effort disclosures) and those for which compliance can be satisfied with minimum judgment or effort (low-effort disclosures). This latter group comprises those items for which companies can easily engage in using boilerplate language, as opposed to providing specific information that will assist users in better understanding the estimates and judgments underlying accounting measurements.

¹⁴ Although the views in Watts (2003) and Ramanna and Watts (2012) relate to SFAS 142 within the framework of US GAAP, they are equally applicable to IFRS. This is due to the fact that IFRS 3, which prohibits pooling of interests and abolishes goodwill amortization, was the outcome of an IASB-FASB joint project and is often viewed as being complemented by revisions to IAS 36 that led to annual impairment testing rules for acquired goodwill.

5. Timeliness of impairments in Europe: the big picture

Introduction

In this section, we first provide descriptive evidence on the overall incidence of impairment charges during 2010-11 recognized by listed European non-financial companies.¹⁵ We concentrate on impairments of non-current non-financial assets - specifically PP&E, intangible assets and goodwill. Companies included in the analysis: (i) are domiciled and listed in one of 23 European Union countries, Norway or Switzerland,¹⁶ (ii) have financial statement data available in the Worldscope database for the two most recent financial years in the period 2009-11 and (iii) have non-zero total assets in both years.¹⁷

There are 4,474 unique companies satisfying these initial sample requirements. For this sample, we then evaluate the timeliness of impairments during the post-IFRS adoption period (2006-11) based on the ability of accounting to reflect good news and bad news that is impounded in stock returns. Our assessment is based on the notion that earnings respond more to bad news (negative stock returns) than to good news (positive stock returns).

The incidence and intensity of impairments

In order to establish an understanding about the overall incidence of impairments across countries and industries, we compute a measure of overall impairment intensity. This is defined as the total non-current non-financial asset impairment charge as a percentage of total assets at the beginning of the year (% assets).¹⁸ We require that impairment intensity is positive and that each of the three components of the total impairment charge is non-negative in both the most recent and previous reporting periods.¹⁹ We also compute impairment frequency, which is defined as the percentage of companies in the selected sample that report impairment charges (% firms). We examine both overall impairments and the three components separately.

In table 5.1, we present summary statistics describing impairment frequencies and impairment intensity both overall and for each of the three asset classes. We report median values of impairment intensity because small numbers of companies in our sub-samples recognize relatively large impairment charges, rendering mean values misleading. We also note that, in some cases, the number of companies taking impairments in some countries is quite small. Therefore, we do not seek to test whether differences across countries are statistically significant.

Column (2) of table 5.1 shows that impairment charges are present for at least one of the three asset classes considered in 29.55% of all companies for which we can estimate impairment intensity. However, the proportion of companies recognizing impairments varies considerably across countries, with the proportion of impairment companies in Spain and Italy being in excess of 50% while, on the other hand, Romania, Lithuania and Greece have fewer than 20% impairment companies. Although lower rates of impairment recognition in this latter group of countries could be due to more benign economic conditions, they could also reflect more aggressive assumptions in estimating recoverable amounts (more headroom in impairment calculations) or, alternatively, less diligent application of impairment testing. We acknowledge, however, that some of the low impairment countries are relatively small, in terms of the number of listed companies covered in Worldscope. Therefore, reported differences between countries have to be interpreted with caution and are not necessarily statistically significant.

In column (3), we present the median magnitude of impairment intensity (total impairment charge as a percentage of total assets at the previous year-end) for the subset of impairment companies. Over the full impairment sample, the median impairment charge is 0.52% of opening total assets. However, impairment intensity in some countries is much higher. For example, in Romania, Slovakia and Sweden, median impairment intensity exceeds 2.5% of total assets.

As shown in column (4), the asset class suffering the most frequent impairment is PP&E, partially reflecting the fact that most companies have significant assets in this class while fewer companies have goodwill and other intangible assets on their balance sheets. The overall proportion of companies impairing PP&E is 19.73%, but in three countries (Austria, Italy and Spain), more than 35% of companies take PP&E impairment charges. The median impairment charge for PP&E impairers is 0.26% of total assets (column 5), but in Romania and Slovakia the median impairment again exceeds 2.5% of total assets.

¹⁵ Financial industry is defined as banks, insurance, real estate, financial services and equity/non-equity investment instruments. These are excluded due to the specialized nature of their activities and industry-specific financial reporting practices.

¹⁶ We exclude firms domiciled in Bulgaria, Cyprus, Latvia and Malta as Worldscope does not capture impairment data for these countries. It is not feasible to determine with certainty whether this is due to the absence of impairments in these countries, or whether it stems from database limitations.

¹⁷ We use the convention that the financial year is labeled 2010 if it ends in the period between June 2010 and May 2011. A similar rule is applied for financial year 2009.

¹⁸ Total impairment charge = goodwill impairment (Worldscope item WS18225) + other intangibles impairment (Worldscope item WS18226) + PP&E impairment (Worldscope item WS18274). These items are based on the Worldscope Database Datatype Definitions Guide provided by Thomson Financial.

¹⁹ In a small number of cases, Worldscope records negative impairment charges, perhaps as a result of partial reversals of prior period charges.



Table 5.1 - Impairment frequency (% Firms) and impairment intensity (% Assets) by country

Country	Firms (1)	All non-current non-financial assets		PP&E		Intangible assets		Goodwill	
		% Firms (2)	% Assets (3)	% Firms (4)	% Assets (5)	% Firms (6)	% Assets (7)	% Firms (8)	% Assets (9)
Austria	50	44.68	0.31	38.30	0.19	22.45	0.13	14.00	0.52
Belgium	88	34.48	0.32	26.44	0.18	7.95	0.28	9.09	0.40
Czech Republic	14	33.33	0.42	25.00	0.31	0.00	NA	7.14	0.53
Denmark	103	32.04	0.59	17.48	0.19	22.33	0.38	5.83	3.76
Estonia	13	36.36	0.20	27.27	0.07	15.38	0.06	7.69	0.34
Finland	107	36.19	0.44	25.71	0.11	13.08	0.16	13.08	1.08
France	524	28.54	0.39	18.38	0.27	6.68	0.17	13.77	0.29
Germany	570	28.60	0.46	20.92	0.25	16.32	0.14	8.79	0.52
Greece	216	17.29	0.27	12.62	0.24	3.24	0.05	6.02	1.78
Hungary	31	23.33	0.09	20.00	0.06	9.68	0.07	3.23	0.02
Ireland	33	45.45	0.56	27.27	0.36	27.27	0.26	3.03	0.44
Italy	205	50.25	0.16	35.32	0.08	18.05	0.10	12.68	0.30
Lithuania	25	16.67	0.51	12.50	0.26	8.00	0.42	0.00	NA
Luxembourg	7	42.86	0.18	28.57	0.12	14.29	0.11	14.29	0.59
Netherlands	87	46.99	0.27	32.53	0.19	24.14	0.33	11.49	0.43
Norway	153	42.76	0.74	34.21	0.34	9.80	0.37	13.07	0.78
Poland	291	26.02	0.41	18.59	0.24	5.86	0.08	6.21	0.56
Portugal	45	29.55	0.32	22.73	0.25	4.44	0.82	11.11	0.89
Romania	71	1.41	2.57	1.41	2.57	0.00	NA	0.00	NA
Slovakia	11	18.18	3.46	18.18	3.46	0.00	NA	0.00	NA
Slovenia	28	25.00	0.43	21.43	0.27	3.57	10.77	7.14	0.01
Spain	96	55.29	0.32	47.06	0.26	8.33	0.24	12.50	0.48
Sweden	368	24.66	2.53	12.33	0.24	11.68	1.94	9.24	3.97
Switzerland	168	36.20	0.36	29.27	0.17	16.67	0.20	8.38	0.41
United Kingdom	1,170	25.56	1.42	13.86	0.60	12.01	1.49	8.66	1.91
Total	4,474	29.55	0.52	19.73	0.26	11.62	0.33	9.34	0.61

Goodwill impairments are observed for 9.34% of the Worldscope sample (column 8), while intangible assets suffer impairment charges in 11.62% of companies (column 6). Again, we observe considerable cross-country variation in the magnitudes of impairment charges in the case of these two asset classes. While the median goodwill impairment is 0.61% of total assets, it exceeds 3% of total assets in Denmark and Sweden. Similarly, in the case of intangible assets, the median impairment is just 0.33% of total assets, but it exceeds 10% in Slovenia and is almost 2% in Sweden. On the other hand, the median value of impairments of intangible assets is very low in several countries including Estonia, Greece, Hungary and Poland.

In table 5.2, we repeat the analysis of impairment intensity and the magnitudes of impairment charges across the three asset classes based on nine broad industry codes: building materials, consumer goods, consumer services, healthcare, industrials, oil and gas, technology, telecommunications and utilities.²⁰ The frequency with which impairments are recognized varies considerably across the nine industries, with over 40% of companies in oil and gas, telecommunications and utilities recognizing impairments in one or more asset class in 2010-11. The magnitude of impairment intensity is also high for oil and gas, exceeding 1% of total assets in this industry and in the healthcare and technology industries. Impairment intensity is lowest in the telecommunications industry.

Table 5.2 - Impairment intensity and impairment components by industry

Industry	Firms (1)	All non-current non-financial assets		PP&E		Intangible assets		Goodwill	
		% Firms (2)	% Assets (3)	% Firms (4)	% Assets (5)	% Firms (6)	% Assets (7)	% Firms (8)	% Assets (9)
Basic Materials	391	33.51	0.62	24.66	0.34	13.30	0.48	4.86	0.15
Consumer Goods	681	28.25	0.32	22.29	0.21	10.15	0.19	7.37	0.30
Consumer Services	719	33.09	0.55	22.03	0.32	12.83	0.19	12.57	0.71
Healthcare	346	26.33	1.27	14.50	0.45	15.03	1.05	6.94	2.81
Industrials	1,268	26.76	0.36	18.25	0.18	8.61	0.19	9.39	0.50
Oil and gas	253	44.35	1.34	29.44	0.84	22.92	2.47	7.91	0.87
Technology	616	21.38	1.17	8.88	0.25	8.62	1.36	9.43	1.91
Telecommunications	68	41.54	0.22	29.23	0.03	25.00	0.11	14.71	0.43
Utilities	132	44.27	0.30	35.11	0.20	12.88	0.14	20.45	0.20
Total	4,474	29.55	0.52	19.73	0.26	11.62	0.33	9.34	0.61

Columns (4) to (9) of table 5.2 reveal considerable variation across industries in the frequency of impairment charges and impairment intensity in different asset classes. The oil and gas and telecommunications industries have relatively high incidences of impairment charges for PP&E and intangible assets, while utilities companies are far more likely to impair goodwill. However, the magnitudes of impairments of PP&E are highest in the oil and gas industry (0.8%), while the median impairment of goodwill is

2.8% of total assets in the healthcare industry and the highest impairment charge for intangible assets is found in the oil and gas industry (2.4%).

Overall, the descriptive statistics in tables 5.1 and 5.2 indicate that over the 2010-11 reporting period, impairments of non-current non-financial assets were recognized by approximately 30% of listed companies in Europe. Of course, many companies are not acquisitive and therefore do not have recognized goodwill, and many other companies do not recognize intangible assets.

²⁰Our industry analysis of impairment intensity and the magnitude of impairment charges is based on the Industry Classification Benchmark (ICB) of Dow Jones and FTSE (excluding Financials).



For such companies, we would not expect to observe impairments in these asset classes. However, most companies do recognize PP&E. In the prevailing unfavorable economic conditions, it is not clear whether the observed incidence of impairments of 19.73% is more or less than might reasonably have been expected. To answer this question would require consideration of how sensitive economic values of firm-specific assets are to general economic conditions and also how aggressive companies have been in recognizing impairments in previous years. We examine this issue based on the timeliness of impairments by European companies in the post-IFRS adoption period.

Timeliness of recognition of economic losses

Upward revaluations of non-current non-financial assets are rare under IFRS, and when they occur, they usually do not affect reported earnings in the current period.²¹ Instead, increases in economic values will be recognized gradually in the future as higher expected cash flows are recognized as part of future earnings. In contrast, impairment losses reflecting reductions in economic values of assets do flow through current period earnings. Consistent with conservative accounting, Basu (1997) and others (e.g., Pope and Walker, 1999; Ball et al., 2000; Holthausen and Watts, 2000; Giner and Rees, 2001) document systematic evidence of more-timely recognition of losses than gains, partly as a result of impairment accounting. This strand of conservatism research usually adopts a reverse regression model to capture the extent to which concurrent changes in economic values, proxied by stock returns, are recognized and reflected in contemporaneous accounting earnings.

We rely on this model to assess the extent to which economic losses flow through into reported earnings and impairments in a timely manner for our sample of European companies over the post-IFRS adoption period. Based on Basu (1997), we derive a measure of the fraction of economic loss suffered by a firm in a financial year that is actually recognized in reported earnings during the same reporting period. We also estimate the proportion of economic loss that is captured by recognized impairment charges on our three asset classes. In our tests, we use contemporaneous stock returns as the proxy for economic gains (losses) experienced by the firm.

Subsequently, we examine how the speed of recognition of bad news in earnings varies with the nature of countries' institutional features. For these purposes, we classify our sample of European countries based on Leuz (2010) discussed in section 4. Our sample country-clusters are presented in table 5.3.

Table 5.3 - European institutional country-clusters

Cluster 1	Cluster 2	Cluster 3
Large and developed stock markets	Less developed stock markets	Less developed stock markets
Dispersed ownership	Concentrated ownership	Concentrated ownership
Strong investor protection	Weak investor protection	Weak investor protection
Strong enforcement	Strong enforcement	Weak enforcement
Ireland	Austria	Czech Republic*
United Kingdom	Belgium	Estonia*
	Denmark	Greece
	Finland	Hungary
	France	Italy
	Germany	Lithuania*
	Luxembourg	Poland*
	Netherlands	Portugal
	Norway	Romania*
	Spain	Slovakia*
	Sweden	Slovenia*
	Switzerland	

*We include Eastern European countries in the relatively weaker institutional cluster based on their proximity to other countries included in cluster 3 although results for these countries are not available in Leuz et al. (2003) or Leuz (2010).²²

Table 5.4 contains the timeliness measure based on the reverse regression model. In unreported results, we find that, when companies experience good news (increases in economic value), current period earnings are generally not related to contemporaneous increases in companies' economic values. Instead, current period good news shows up gradually in future period earnings. This finding is consistent with results from previous research (e.g., Pope and Walker, 1999; Ball et al., 2000; Roychowdhury and Watts, 2007).

²¹Based on the revaluation model of both IAS 16 and IAS 38, revaluation increases are credited to "revaluation surplus" which is reported as part of comprehensive income and accumulated in equity. An exception, however, is the remeasurement of investment property based on the fair value model of IAS 40 according to which, gains or losses arising from changes in fair value must be included in net profit or loss for the period in which it arises.

²²We test the sensitivity of our results to the selected classification of Eastern European countries not included in Leuz (2010). The findings are generally robust under the alternative specification that excludes results for these countries.

Table 5.4 - Sensitivity of current period earnings and impairments to bad news

Countries and clusters	Earnings (1)	PP&E impairment (2)	Intangible asset impairment (3)	Goodwill impairment (4)
All countries	31.7%	5.7%	7.4%	17.8%
Cluster 1	35.1%	9.4%	9.2%	20.7%
Cluster 2	32.9%	4.4%	5.3%	12.9%
Cluster 3	18.6%	1.2%	0%	5.9%

In contrast, when companies experience bad news (decreases in economic value), a significant proportion of economic losses are reflected in current period earnings. Column (1) shows that, over all countries, approximately 31% of economic losses are reflected in current period earnings. Of this, 5.7% can be attributed to PP&E impairment charges, 7.4% to impairments of intangible assets and 17.8% to goodwill impairments. Thus, as predicted, the speed of recognition of bad news is faster relative to good news recognition; and impairment charges account for a significant proportion of the overall bad news recognition.

When we estimate the speed of bad news recognition within the framework of the identified country-clusters, we find strong evidence that the speed of recognition of bad news is highest in the cluster 1 countries (35.1%) where institutions and the capital market infrastructure are strongest. Companies suffering economic losses in cluster 2 countries also capture a relatively high proportion of bad news (32.9%) in current period earnings, although this is statistically significantly lower than cluster 1 countries. In contrast, cluster 3 countries recognize a much lower proportion of bad news in current period earnings (18.6%).

This pattern of bad news timeliness across the country-clusters is repeated in columns (2) to (4) when we focus on recognized impairment losses. Companies in cluster 1 countries consistently recognize higher levels of impairment loss in relation to their incurred economic losses than companies in cluster 2 countries, which in turn recognize impairments in a more-timely manner than those in cluster 3 countries.

Overall, these findings suggest important cross-country differences in the quality of bad news recognition decisions that originate in the institutions within which financial reporting takes place. They indicate the role that the institutional infrastructure plays in shaping financial reporting outcomes in different European countries that are all reporting under IFRS.



6. Survey of impairment disclosure practices and compliance

Objectives of the survey

We examine IFRS impairment disclosures in 2010-11 for a sample of European listed companies and seek to shed light on the role of firm-level attributes and country-level institutions in shaping reporting practices. We pursue three main objectives. The principal objective of our survey is to assess the degree to which disclosure practices relating to impairments conform to the requirements of IFRS. Next, we assess the significance of firm-specific features and institutional factors in explaining compliance levels. Finally, we analyze the level of compliance with disclosure requirements in relation to our assessment of the level of implementation effort involved.

Survey design

We focus on impairment reporting practices in three asset classes: PP&E, intangible assets and goodwill. To quantify reporting behavior, we rely on a self-constructed compliance survey instrument against which the financial disclosures of sample companies are evaluated.²³ This instrument was developed based on our review of reporting standards applicable to each asset class and Ernst & Young illustrative checklists summarizing the disclosure requirements of IFRS. Our assessment emphasizes both overall compliance and disclosure quality in 11 areas. These include: (i) accounting policies and judgments, (ii) estimation uncertainty, (iii) changes to past assumptions, (iv) sensitivity of carrying amounts, (v) events and circumstances, (vi) basis for recoverable amount, (vii) impairments as part of segment results, (viii) allocation of impaired assets to segments, (ix) CGU description and allocation of goodwill to CGUs, (x) impairment by asset class, segment and CGU and (xi) cash flow projections, growth and discount rates.²⁴

Given its importance in generating our survey data, we conduct reliability and validity checks on the application of the survey instrument. For reliability, we investigate results from a series of trial cases involving members of the research team. Using a constant set of annual reports for assessment, we establish stable outcomes across different team members. To assess validity, we subject the instrument to scrutiny and review by a range of academic peers and a panel from Ernst & Young subject matter professionals in impairment reporting. Completion of the survey instrument is based on a document study of sample companies' annual reports. For each sample company, a disclosure checklist is completed following a tri-modal "comply", "non-comply" or "not-applicable" taxonomy.²⁵

Data from the instrument are summarized in two compliance indices:

(i) unweighted index and (ii) partial index. The indices are first calculated for each sample company across the three asset classes. Each index is then aggregated to produce country- and industry-level results. The widely accepted method for quantifying compliance is the unweighted index (e.g., Street and Bryant, 2000). The unweighted index treats all disclosure items as equally important. But adopting this approach has its limitations. In particular, the number of items included in the different areas of disclosure varies, meaning that areas with the largest number of disclosure dimensions (questions) are essentially given higher weight in the overall compliance index. To avoid this problem, we also rely on the partial index approach of Street and Gray (2002). According to this method, the overall disclosure rating for each company is reflected in its average score based on the ratio of the number of observed to applicable requirements. This approach allocates equal weighting to each reporting item and avoids the problem of assigning more weight to groups with a larger number of requirements.

Survey sample

To assess compliance, we analyze financial statement disclosures for a subset of companies drawn from the main sample described in section 5. This sample is based on the top 30% of companies in each country ranked by overall non-current non-financial asset impairment intensity. This requirement ensures a reasonably representative degree of balance across European countries. It also avoids skewness toward countries where the magnitude of recognized impairment is especially high. From the initial Worldscope sample with evidence of impairment charges, we select the top 365 companies. We search for annual reports for financial periods ending between June 2010 and May 2011 using the Thomson One Banker company filings database, or if unavailable, through company websites. Excluding companies with missing or incomplete annual reports and non-IFRS companies, and those where the financial statements did not contain evidence of impairments, the survey sub-sample reduces to 324 companies, as outlined in table 6.1.

²³ The compliance assessment instrument is available on request from CeFARR.

²⁴ We also analyze disclosures on the separate inclusion of current period impairments as part of assets' opening to closing balance reconciliation schedules but do not report tabulated findings for this item. We do, however, account for its results when evaluating overall compliance and the role of judgment and effort in shaping disclosure behavior.

²⁵ We exclude non-applicable items from our compliance indices, but assess and confirm the robustness of our overall results to their omission.



Table 6.1 - Survey sample

Impairment-intensive firms	365
Incomplete or missing information	7
Firms with available information	358
Non-impairment firms	16
Non-IFRS reporters	18
Final sample	324

Tables 6.2 and 6.3 describe the composition of the survey sample by country and by industry. According to table 6.2, the median impairment intensity for the sample is just over 5% of total assets noted in column (2). However, median impairment intensity varies considerably, reaching 17.5% of total assets in Sweden and close to 15% in the UK. Impairments are spread fairly evenly across the three asset classes, with over 50% of the sample taking impairments in each asset class. However, the highest level of impairments for most countries relates to goodwill (column 8), where the median impairment level is 3.89% of total assets.

Table 6.2 - Survey sample: Impairment intensity and impairment components by country

Country	Non-current non-financial assets		PP&E		Intangible assets		Goodwill	
	Firms (1)	% Assets (2)	Firms (3)	% Assets (4)	Firms (5)	% Assets (6)	Firms (7)	% Assets (8)
Austria	6	6.21	4	1.73	4	5.95	3	3.20
Belgium	7	2.71	6	1.23	3	2.15	2	0.32
Czech Republic	1	0.53	-	-	-	-	1	0.53
Denmark	8	7.53	3	0.21	6	9.77	4	4.42
Estonia	1	1.02	1	0.96	1	0.06	-	-
Finland	10	5.24	6	0.41	4	0.73	9	4.16
France	33	2.34	16	0.98	12	1.01	21	2.21
Germany	43	2.49	28	1.30	30	0.93	23	1.81
Greece	8	9.64	3	2.44	4	0.68	8	2.89
Hungary	2	1.60	2	1.42	1	0.36	-	-
Ireland	3	1.12	1	0.92	3	1.12	-	-
Italy	27	1.05	16	0.81	12	0.64	11	1.00
Lithuania	1	0.84	0	-	1	0.84	-	-
Netherlands	11	2.34	6	0.87	8	1.80	4	3.47
Norway	18	5.37	11	3.62	5	2.28	7	5.80
Poland	16	2.34	11	2.11	6	1.00	3	1.16
Portugal	2	1.99	1	0.89	2	0.82	1	1.44
Slovenia	2	8.97	1	7.17	1	10.77	1	0.00
Spain	13	2.99	8	3.00	5	1.27	6	1.44
Sweden	19	17.52	5	1.05	11	10.25	11	14.04
Switzerland	16	1.34	13	0.74	9	0.93	5	5.19
United Kingdom	77	14.57	26	4.38	53	6.92	40	11.02
Total	324	5.01	168	1.37	181	1.97	160	3.89

Table 6.3 - Survey sample: Impairment intensity and impairment components by industry

Industry	Non-current non-financial assets		PP&E		Intangible assets		Goodwill	
	Firms (1)	% Assets (2)	Firms (3)	% Assets (4)	Firms (5)	% Assets (6)	Firms (7)	% Assets (8)
Basic materials	29	5.42	20	1.72	18	1.81	5	5.19
Consumer goods	41	2.21	27	1.34	19	1.38	13	2.25
Consumer services	54	4.22	26	0.78	34	1.18	39	6.37
Healthcare	29	7.54	13	1.49	22	2.76	9	8.78
Industrials	59	4.59	30	2.19	25	1.21	39	3.20
Oil and gas	44	6.39	29	2.61	30	4.97	8	3.80
Technology	51	8.34	12	6.24	24	2.26	34	8.39
Telecommunications	3	10.77	2	1.41	3	10.25	1	0.01
Utilities	14	1.76	9	0.98	6	0.93	12	0.84
Total	324	5.01	168	1.37	181	1.97	160	3.89

Compliance: descriptive findings

In this section, we report descriptive evidence from our survey. First, findings from the unweighted and partial indices that include all impairment reporting requirements are outlined. We present these results by country and industry. We complement these findings with an evaluation of impairment reporting requirements in the eleven disclosure areas noted above. To do so, we initially discuss disclosures that are common across the three asset classes. This approach facilitates comparisons of the similarities and disparities that may exist in disclosure quality across the assets. We then turn to evaluating results for goodwill-specific disclosures. For all asset groups, we aim to highlight disclosure areas where compliance is lacking, problematic or heterogeneous.

► Overall compliance

Following our compliance measurement methodology, we summarize the hand-collected data from companies' annual reports using unweighted and partial disclosure indices. The indices are described at two levels: (i) country of domicile and (ii) industry. The adoption of these two bases is rooted in the role of country-level institutions and industry-wide forces in shaping reporting attitudes. Given differences in enforcement and regulatory regimes, it would not be surprising to observe uneven levels of IFRS compliance in different countries. Similarly, disclosure practices may reflect industry commonalities.²⁶ While intra-sector comparability might be most important to many financial statement users, cross-industry differences can be equally interesting and indicative of implementation and compliance difficulties arising due to industry-specific issues.

Table 6.4 presents country-level compliance indices for the three asset classes. The findings show that, with the exception of Ireland within the PP&E class, there are no other instances of full compliance. We find variation in the unweighted (partial) compliance indices between and within the asset classes. Median compliance ranges from 77.2% (87.4%) for intangible assets to 85.6% (93.1%) for PP&E. We document collectively high disclosure quality for PP&E in several countries within our sample, including Estonia, Norway and Portugal, all registering compliance of over 90%. Lower rates are found for sample companies in Greece, Poland and Sweden. Turning to intangible assets, we observe low compliance close to 60% for sample companies in Germany, Greece and Lithuania, while those based in Finland, Hungary and Slovenia exhibit scores of over 90%. For goodwill, we find low compliance within companies in Belgium, Greece and Slovenia, while companies in Finland, Switzerland and the United Kingdom have relatively higher levels of compliance.

As noted earlier, given the relatively small size of our cross-sectional sample, caution should be exercised in generalizing from these findings. Nevertheless, our overall results indicate that Finnish companies in our sample consistently score high on compliance, while those from Greece are persistently ranked among the low-compliance group. These differences may stem from country-level institutions or firm-specific features or they may relate to impairment intensity. Generally, a positive association should hold between the materiality of impairments and efforts to comply with the rules. A possible link between impairment materiality and compliance appears to have some support in the data.

²⁶ Jaafar and McLeay (2007), among others, report on industry effects on the level of corporate disclosures. We examine the role of industry in explaining compliance in further detail later in this section.



For instance, in UK companies within the goodwill class, a high level of intensity (11.02%) is coupled with an above-median compliance score of 85.3%. Observations in Sweden in the same group are also consistent with this view. Similar findings are found for intangible assets where the high impairment-intensity companies of Sweden and Slovenia register

above-median compliance. On the other hand, the low impairment-intensity companies of Poland exhibit below-median compliance of 65.8%. This relation does not appear to be as strong in the PP&E group. For example, although the relatively high impairment-intensity companies of Norway (3.62%) and the UK (4.38%) reveal above-median compliance, equally

Table 6.4 - Impairment reporting: Country-level compliance indices

Country	PP&E IFRS compliance				Intangible assets IFRS compliance				Goodwill IFRS compliance			
	Firms	Intensity	Unweighted	Partial	Firms	Intensity	Unweighted	Partial	Firms	Intensity	Unweighted	Partial
Austria	4	1.73%	83.5%	87.6%	4	5.95%	75.1%	87.4%	3	3.20%	82.0%	88.9%
Belgium	6	1.23%	85.5%	94.0%	3	2.15%	75.3%	88.1%	2	0.32%	61.1%	73.8%
Czech Republic	-	-	-	-	-	-	-	-	1	0.53%	87.5%	85.4%
Denmark	3	0.21%	86.3%	94.2%	6	9.77%	75.0%	83.2%	4	4.42%	81.0%	89.3%
Estonia	1	0.96%	92.3%	96.9%	1	0.06%	64.3%	79.2%	-	-	-	-
Finland	6	0.41%	91.1%	96.3%	4	0.73%	94.4%	97.3%	9	4.16%	90.9%	94.7%
France	16	0.98%	85.3%	91.4%	12	1.01%	77.7%	87.0%	21	2.21%	82.1%	88.3%
Germany	28	1.30%	79.5%	85.5%	30	0.93%	61.5%	71.2%	23	1.81%	81.7%	84.2%
Greece	3	2.44%	73.3%	83.5%	4	0.68%	58.2%	67.6%	8	2.89%	68.0%	77.4%
Hungary	2	1.42%	82.6%	93.2%	1	0.36%	93.3%	97.5%	-	-	-	-
Ireland	1	0.92%	100%	100%	3	1.12%	88.7%	93.6%	-	-	-	-
Italy	16	0.81%	87.9%	92.9%	12	0.64%	77.2%	89.7%	11	1.00%	82.5%	84.5%
Lithuania	-	-	-	-	1	0.84%	58.3%	82.1%	-	-	-	-
Netherlands	6	0.87%	87.3%	98.5%	8	1.80%	83.8%	93.2%	4	3.47%	89.7%	93.4%
Norway	11	3.62%	92.2%	97.8%	5	2.28%	70.6%	76.1%	7	5.80%	77.2%	81.6%
Poland	11	2.11%	75.2%	84.1%	6	1.00%	65.8%	81.4%	3	1.16%	75.0%	83.2%
Portugal	1	0.89%	92.3%	96.9%	2	0.82%	77.2%	90.8%	1	1.44%	87.5%	85.4%
Slovenia	1	7.17%	78.6%	91.7%	1	10.77%	93.8%	97.8%	1	0.00%	44.4%	65.8%
Spain	8	3.00%	85.7%	93.9%	5	1.27%	86.8%	94.7%	6	1.44%	78.9%	83.5%
Sweden	5	1.05%	74.3%	85.1%	11	10.25%	80.3%	85.9%	11	14.04%	81.4%	82.7%
Switzerland	13	0.74%	82.5%	89.2%	9	0.93%	83.9%	88.4%	5	5.19%	92.3%	96.0%
United Kingdom	26	4.38%	85.6%	92.5%	53	6.92%	76.6%	85.9%	40	11.02%	85.3%	90.5%
Total/median	168	1.37%	85.6%	93.1%	181	1.97%	77.2%	87.4%	160	3.89%	81.8%	84.9%

high compliance is found in the low impairment-intensity companies of Finland and Italy. High levels of compliance in this asset class could, however, be attributed to the lower degree of subjectivity involved in the impairment reporting process compared with the other two asset groups.

Table 6.5 highlights variations in impairment intensity and compliance across different industries. Across the three asset classes, compliance tends to be lower in intangible assets (73.1%) compared with PP&E (85.7%) and goodwill (77.8%). In terms of our conjecture on the association between impairment intensity and compliance, we find

mixed results. For instance, high goodwill impairment-intensive industries such as consumer services and technology also have relatively high levels of compliance. For intangible assets, however, the telecommunications industry exhibits below-median compliance levels while registering the highest degree of intensity. Similarly, PP&E impairment intensity is relatively high in the technology industry but compliance is very low. In contrast, oil and gas and industrials, which are the other impairment-intensive industries within this group, display considerably higher compliance scores of 90.3% and 84.2% respectively.

Table 6.5 - Impairment reporting: Industry-level compliance indices

Industry	PP&E IFRS compliance				Intangible assets IFRS compliance				Goodwill IFRS compliance			
	Firms	Intensity	Unweighted	Partial	Firms	Intensity	Unweighted	Partial	Firms	Intensity	Unweighted	Partial
Basic materials	20	1.72%	85.4%	89.9%	18	1.81%	73.0%	85.2%	5	5.19%	77.6%	84.6%
Consumer goods	27	1.34%	76.5%	84.6%	19	1.38%	72.0%	83.9%	13	2.25%	72.6%	78.8%
Consumer Services	26	0.78%	85.7%	92.6%	34	1.18%	77.0%	83.8%	39	6.37%	86.4%	91.0%
Healthcare	13	1.49%	87.6%	99.0%	22	2.76%	76.0%	85.4%	9	8.78%	77.8%	84.9%
Industrials	30	2.19%	84.2%	90.2%	25	1.21%	73.1%	84.3%	39	3.20%	83.9%	87.6%
Oil and gas	29	2.61%	90.3%	97.1%	30	4.97%	79.0%	88.3%	8	3.80%	76.5%	83.7%
Technology	12	6.24%	68.0%	76.0%	24	2.26%	70.6%	77.3%	34	8.39%	84.1%	88.4%
Telecommunications	2	1.41%	100%	100%	3	10.25%	72.3%	72.2%	1	0.01%	79.2%	81.9%
Utilities	9	0.98%	90.6%	96.2%	6	0.93%	81.5%	90.5%	12	0.84%	77.3%	81.0%
Total/median	168	1.37%	85.7%	92.6%	181	1.97%	73.1%	84.3%	160	3.89%	77.8%	84.6%



We now turn to the analysis of eleven disclosure areas from items included in the measurement of companies' overall compliance indices.

► Accounting policies and judgments

IAS 1 requires the provision of information on the measurement basis (or bases) used in preparing the financial statements (IAS 1.117). The standard also requires disclosures on judgments made in applying accounting policies (IAS 1.122). Judgments lie at the heart of the financial reporting process and have an important effect on income recognition and asset remeasurement. The provision of disclosures on judgments is intended to assist users in better understanding the measurement bases used in financial statements. Unfortunately, disclosures on judgments can often be bland and uninformative.

Based on the likely influence of judgments on the outcomes of the reporting process, we assess compliance with IFRS requirements on policy disclosures relating to PP&E, intangible assets and goodwill. Our primary objective is to determine the presence or otherwise of such disclosures and to then evaluate the nature and quality of information contained in the disclosures.

Initial results suggest that a majority of companies within the three asset groups provide a relevant policy note. Similarly, most of the companies present a note on judgments made in recognizing and measuring the assets.²⁷ The only noticeable exceptions in this category are companies from Greece, where compliance scores are 66.7% and 75% for judgments associated with PP&E and intangible assets respectively.

In spite of the generally high degree of compliance, we find variations in the depth of the disclosures. A majority of companies can be described as "box-ticking" their way through the compliance process, while a smaller number of companies present detailed disclosures on the nature of and reasoning underlying their impairment policies and judgments. A common feature of the box-ticking group is the excessive use of boilerplate language whereby companies can claim to have complied with disclosure requirements by essentially restating the wording used in

a relevant IFRS without attempting to provide detailed disclosure on the nature and reasoning of their judgments.

To the extent that boilerplate box-ticking is a problem, measures of overall compliance might appear high but can mask low levels of compliance in areas requiring managerial effort as the key ingredient to satisfying reporting requirements. We return to this issue in the last part of this section.

► Estimation uncertainty

Estimation uncertainty is an inherent characteristic of many accounting measurements. In estimating future uncertain values, financial information must not only represent relevant phenomena, but it should also faithfully represent the phenomena that the information purports to represent (Framework, QC12). But faithful representation may not be sufficient in producing useful information. Estimates of the amount by which carrying amounts should be adjusted to reflect impairment can be a faithful representation if the entity properly applies an appropriate process, properly describes the estimate and explains any uncertainties that significantly affect the estimate. However, if the level of uncertainty in such an estimate is sufficiently large, that estimate will not be particularly useful (Framework, QC16).

IAS 1 requires entities to disclose information on their assumptions about the future and other sources of estimation uncertainty that have a significant risk of leading to a material adjustment to the carrying amounts of assets and liabilities within the next financial year (IAS 1.125). The standard notes various examples of types of relevant disclosures (IAS 1.129) and clarifies that the nature and extent of these disclosures vary based on the nature of the assumption and other circumstances.

²⁷ Given the homogeneous level of compliance observed in this disclosure area at both the country and industry levels, the results for this disclosure area have not been tabulated.



Our review of disclosures on the nature of assumptions and estimation uncertainty confirms that compliance is generally quite high across the three asset classes. We find that a large majority of companies in the PP&E impairment category provide the minimum required level of disclosure on assumptions influencing estimation uncertainty together with descriptions of their nature. Adequate disclosures are also found in most cases that we review in the intangible assets category. The minor exceptions are sample companies in Poland with 60%, and those in Germany and Greece with 73% and 75% compliance, reflecting some inadequacy or absence of information. Turning to the goodwill sub-sample, with the exception of sample companies domiciled in Austria and Belgium that register low compliance for disclosures on estimates influencing the presentation of goodwill (66.7% and 50%, respectively), in the majority of other European countries, we find high levels of IFRS compliance.

Adopting an industry perspective, our results are highly consistent with findings noted above. The sole outlier is the telecommunications industry and the disclosures we observe in the intangible assets sub-sample. In spite of high impairment intensity in this asset class, we document a relatively low compliance score of 66.7% for disclosures on estimation uncertainty in this industry.

► Changes to past assumptions

Consistent with the requirements of IAS 1, we also evaluate disclosures on changes made to past assumptions by sample companies within each of the three asset groups.²⁸ Contrary to our expectations, and despite the dynamic nature of the economic fundamentals (e.g., interest rates and economic growth levels) associated with the assumptions that companies should be considering in the initial measurement and subsequent remeasurement of non-current assets, we observe a notable decline in the extent of disclosures in this area for a majority of companies included in our three sub-samples.

► Sensitivity of carrying amounts to changes in methods, assumptions and estimates

For all three asset classes, we evaluate disclosures on the sensitivity of carrying amounts to changes in methods, assumptions and estimates. While we find evidence of such disclosures in the goodwill asset class, consistent with our earlier expectations, we find no disclosures in this area within the two other asset groups. For the goodwill sub-sample, our findings are summarized in tables 6.6 and 6.7. We note that a significant proportion of the sensitivity disclosures for which we assess compliance are based on information reported under IAS 36 as part of sensitivity analyses of goodwill impairment tests.

The results in the two tables indicate a general decline in compliance quality compared with disclosures discussed earlier. At the country level, we document an apparent absence of required disclosures in this area within the set of sample companies from the Eastern European cluster of the Czech Republic, Poland and Slovenia. We find similarly low levels of compliance for the Greek sample companies (25%). In contrast, the Finnish sub-sample registers the highest level of compliance in this category.

Similar results are found at the industry level. Our analysis shows that compliance scores are very low in the oil and gas industry (12.5%) and in the basic materials industry (20%). The high goodwill impairment-intensity healthcare industry also registers low compliance of 22.2%. For the single sample company from the telecommunications industry, we observe no meaningful disclosures in this area.

²⁸ Results for this disclosure area have not been tabulated here, but are available on request.



Table 6.6 - Sensitivity of carrying amount: Compliance by country

Country	Goodwill IFRS compliance		
	Firms	Intensity	Sensitivity to methods, assumptions and estimates
Austria	3	3.20%	66.7%
Belgium	2	0.32%	50%
Czech Republic	1	0.53%	0%
Denmark	4	4.42%	75.0%
Finland	9	4.16%	100%
France	21	2.21%	76.2%
Germany	23	1.81%	56.5%
Greece	8	2.89%	25.0%
Italy	11	1.00%	54.5%
Netherlands	4	3.47%	75.0%
Norway	7	5.80%	57.1%
Poland	3	1.16%	33.3%
Portugal	1	1.44%	0%
Slovenia	1	0.00%	0%
Spain	6	1.44%	75.0%
Sweden	11	14.04%	45.5%
Switzerland	5	5.19%	80%
United Kingdom	40	11.02%	57.5%
Total/median	160	3.89%	56.8%

Table 6.7 - Sensitivity of carrying amount: Compliance by industry

Industry	Goodwill IFRS compliance		
	Firms	Intensity	Sensitivity to methods, assumptions and estimates
Basic materials	5	5.19%	20%
Consumer goods	13	2.25%	53.8%
Consumer services	39	6.37%	64.1%
Healthcare	9	8.78%	22.2%
Industrials	39	3.20%	71.8%
Oil and gas	8	3.80%	12.5%
Technology	34	8.39%	67.6%
Telecommunications	1	0.01%	0%
Utilities	12	0.84%	66.7%
Total/median	160	3.89%	53.8%



► Events and circumstances

We assess disclosures on triggering events underlying the recognition of an impairment loss during the reporting period. Based on our analysis, we identify a wide array of alternative triggering events for the three asset classes. Among the frequently observed indicators are: (i) less than favorable economic conditions, (ii) volatility in markets and changes in levels of market risk and exchange rate risk, (iii) persistent decline in market demand and reduced profit margins, (iv) downward revisions to sales projections, (v) loss of major customers that lead to lower future cash flows from business segments, (vi) reorganizations due to failed projects and (vii) discontinuation or disposal of units or divisions that adversely affect future cash flows. Our assessment focuses on the quality of information and compliance in this area. The results are summarized by country and industry in tables 6.8 and 6.9.

The findings again confirm substantial cross-country and cross-industry variation in the quality of disclosures on the circumstances that explain the incidence of an impairment loss. In the PP&E category, for example, at the country level, the index ranges from full compliance by companies in Austria, Estonia, Ireland and Portugal to lower compliance in France (56.3%), Greece (33.3%) and Sweden (20%), while the single sample company from Slovenia registers an absence of compliance. Similar differences are present across the industries. The consumer goods (55.6%) and technology (41.7%) industries, for example, exhibit the lowest level of compliance while the two companies in the telecommunications industry display full compliance.

We find similar results for intangible assets. Country-level compliance ranges from full compliance in countries including Finland, Hungary and Ireland, to non-compliance in sample companies in Estonia and Lithuania and low compliance in Germany (31.7%), Poland (33.3%) and Spain (20%). We note, however, that this asset class includes both finite- and indefinite-life intangibles. Our review emphasizes disclosures on possible triggers (for finite-life and potentially for indefinite-life intangibles) as well as information on annual impairment tests (indefinite-life intangible assets only). Turning to industry-level results, consumer goods registers low compliance levels at 39.5% followed by consumer services (51.5%) and basic materials (52.8%).

For goodwill, we document full compliance in the Czech Republic, Denmark, Italy, Netherlands, Portugal and Spain. The lowest level of disclosure quality in this category (50%) is registered for preparers in Belgium and Greece. We find no meaningful disclosures in this area for the sample company from Slovenia. At the industry level, compliance ranges between 67% and 89%, excluding the exceptional case of non-compliance for the single firm from the telecommunications industry, which may be partly attributed to its low level of goodwill impairment-intensity in the assessment period.



Table 6.8 - Events and circumstances: Compliance by country

Country	PP&E IFRS compliance			Intangible assets IFRS Compliance			Goodwill IFRS Compliance		
	Firms	Intensity	Events and circumstances	Firms	Intensity	Events and circumstances	Firms	Intensity	Events and circumstances
Austria	4	1.73	100%	4	5.95%	50%	3	3.20%	66.7%
Belgium	6	1.23	83.3%	3	2.15%	66.7%	2	0.32%	50%
Czech Republic	-	-	-	-	-	-	1	0.53%	100%
Denmark	3	0.21	66.7%	6	9.77%	66.7%	4	4.42%	100%
Estonia	1	0.96	100%	1	0.06%	0%	-	-	-
Finland	6	0.41	66.7%	4	0.73%	100%	9	4.16%	77.8%
France	16	0.98	56.3%	12	1.01%	54.2%	21	2.21%	61.9%
Germany	28	1.30	63.0%	30	0.93%	31.7%	23	1.81%	69.6%
Greece	3	2.44	33.3%	4	0.68%	75.0%	8	2.89%	50%
Hungary	2	1.42	50%	1	0.36%	100%	-	-	-
Ireland	1	0.92	100%	3	1.12%	100%	-	-	-
Italy	16	0.81	87.5%	12	0.64%	66.7%	11	1.00%	100%
Lithuania	-	-	-	1	0.84%	0%	-	-	-
Netherlands	6	0.87	66.7%	8	1.80%	75.0%	4	3.47%	100%
Norway	11	3.62	100%	5	2.28%	100%	7	5.80%	85.7%
Poland	11	2.11	63.6%	6	1.00%	33.3%	3	1.16%	66.7%
Portugal	1	0.89	100%	2	0.82%	100%	1	1.44%	100%
Slovenia	1	7.17	0%	1	10.77%	100%	1	0.00%	0%
Spain	8	3.00	75.0%	5	1.27%	20%	6	1.44%	100%
Sweden	5	1.05	20%	11	10.25%	54.5%	11	14.04%	80%
Switzerland	13	0.74	84.6%	9	0.93%	55.6%	5	5.19%	80%
United Kingdom	26	4.38	84.0%	53	6.92%	64.2%	40	11.02%	82.5%
Total/median	168	1.37	70.8%	181	1.97%	66.7%	160	3.89%	80%

Table 6.9 - Events and circumstances: compliance by industry

Industry	PP&E IFRS compliance			Intangible assets IFRS compliance			Goodwill IFRS compliance		
	Firms	Intensity	Events and circumstances	Firms	Intensity	Events and circumstances	Firms	Intensity	Events and circumstances
Basic materials	20	1.72%	80%	18	1.81%	52.8%	5	5.19%	80%
Consumer goods	27	1.34%	55.6%	19	1.38%	39.5%	13	2.25%	69.2%
Consumer services	26	0.78%	65.4%	34	1.18%	51.5%	39	6.37%	75.7%
Healthcare	13	1.49%	88.5%	22	2.76%	63.6%	9	8.78%	88.9%
Industrials	30	2.19%	78.3%	25	1.21%	60%	39	3.20%	87.2%
Oil and gas	29	2.61%	87.9%	30	4.97%	70%	8	3.80%	75.0%
Technology	12	6.24%	41.7%	24	2.26%	62.5%	34	8.39%	67.6%
Telecommunications	2	1.41%	100%	3	10.25%	100%	1	0.01%	0%
Utilities	9	0.98%	66.7%	6	0.93%	66.7%	12	0.84%	75.0%
Total/median	168	1.37%	78.3%	181	1.97%	62.5%	160	3.89%	75.0%

► **Basis for recoverable amount**

Value in use is the popular choice for determining recoverable amount for assets and CGUs across all the asset classes. The distribution of the application of the two methods across the three asset categories for companies that disclose their selected basis for recoverable amount is presented in tables 6.10 and 6.11.

While the data show that the prevalent method for determining recoverable amount is VIU, an equally important observation in both tables is the significant number of cases where disclosures lack clarity in explicitly identifying the selected basis. There are numerous cases within the three asset classes, and especially in the PP&E and intangible assets classes, where we find that, at the policy-note level, the company adequately establishes and communicates its understanding of the requirements under IAS 36 for the estimation of recoverable amount, but in implementing the impairment test(s) fails to specify the adopted basis clearly.

Examining the role of economic conditions in determining the choices made in estimating recoverable amounts is beyond the scope of this study. Nonetheless, it is relevant to note that, despite the ongoing economic downturn over the period covered by the financial statements in our survey, we observe limited disclosures on how market conditions may have influenced estimates of recoverable amounts based on future cash flows (e.g., higher discount rates and/or uncertain growth prospects), especially in connection to PP&E and intangible assets. We would argue that this is a particularly important omission, given that in most of the cases where VIU estimates are used, this is based on a discounted cash flow analysis. In fact, even in those instances where FVLCD is adopted, estimates are based on the discounted cash flow approach, although the cash flows and discount rates are of a different nature (cash inflows and post-tax discount rates) compared with those used in estimating VIU.



Finally, consistent with our earlier findings, we find substantial cross-company differences in the depth and detail of information. Only a limited number of companies in each asset class provide disclosures that are beyond the minimum requirements that would likely provide users with a better understanding of the assumptions underlying estimated recoverable amounts.

► **Impairments as part of segment results**

According to IAS 36, companies that report segment information under IFRS 8 are required to provide, for each reportable segment, the amount of current period impairment loss (IAS 36.129). This is consistent with the requirement under IFRS 8 to disclose, as part of each reportable segment's results, all material non-cash items other than depreciation and amortization (IFRS 8.23). We evaluate the quality and the extent to which such disclosures are made.

Our findings indicate high levels of cross-country and cross-industry variation in reporting practices related to the allocation of impairment losses to segments. For example, for the PP&E sample, we document limited disclosures in companies domiciled in Hungary and Slovenia, while low levels of compliance are registered in Greece (33.3%), Norway (45.5%) and Spain (50%). Compliance in other countries is still

generally far from perfect. Results for the intangible assets (median value 51.9%) and goodwill (median value 73.2%) samples follow a similar trend, with high levels of non- or partial-compliance being the predominant pattern. At the industry level, the results appear to improve. But this may stem from the aggregation of results and the masking of low compliance in most companies by other companies within an industry that exhibit high degrees of compliance.

In analyzing these results further, we find that the apparent absence of impairment disclosures at the segment level is partly due to a large number of companies that report a single operating segment. Under IFRS 8, two or more operating segments with similar economic characteristics may be aggregated into a single operating segment (IFRS 8.12).²⁹ In conducting our review, we encounter various cases in which non- or partial-disclosure of segment information is explained by citing the aggregation criteria of IFRS 8. Given the relevance of disaggregated disclosures in providing users with a basis for making more informed judgments about the company as a whole, in those instances where the aggregation criteria is applied, it is important that preparers provide adequate information on the reasons underlying the decision.

²⁹ A problem cited in the segment reporting literature is that of underreporting and overreporting. This relates to situations where some companies exploit the definitions of financial reporting standards to either underreport by combining all operations as a single, broadly defined segment or overreport by organizing various homogeneous activities as different segments. The management approach of IFRS 8 is designed to rectify such inadequacies based on which, the nature and content of externally disclosed segment information will coincide with how a company is organized and managed internally. While the IASB is currently conducting a post-implementation review of IFRS 8, the effectiveness of the standard in improving the quality of disaggregated disclosures in Europe is yet unclear.

Table 6.10 - Basis for recoverable amount: distribution by country

Country	PP&E Recoverable amount				Intangible assets Recoverable amount				Goodwill Recoverable amount			
	Firms	Unspecified	VIU	FVLCD	Firms	Unspecified	VIU	FVLCD	Firms	Unspecified	VIU	FVLCD
Austria	4	2	50%	50%	4	2	100%	0%	3	1	100%	0%
Belgium	6	2	80%	20%	3	2	100%	0%	2	1	100%	0%
Czech Republic	-	-	-	-	-	-	-	-	1	0	100%	0%
Denmark	3	0	100%	0%	6	3	100%	0%	4	1	100%	0%
Estonia	1	0	100%	0%	1	1	n/a	n/a	-	-	-	-
Finland	6	1	100%	0%	4	0	100%	0%	9	0	90%	10%
France	16	3	92.3%	7.7%	12	4	87.5%	12.5%	21	2	90%	10%
Germany	28	11	60%	40%	30	15	62.5%	37.5%	23	1	72.7%	27.3%
Greece	3	2	100%	0%	4	2	100%	0%	8	2	100%	0%
Hungary	2	1	100%	0%	1	0	100%	0%	-	-	-	-
Ireland	1	0	100%	0%	3	0	100%	0%	-	-	-	-
Italy	16	4	69.2%	30.8%	12	5	87.5%	12.5%	11	0	91.7%	8.3%
Lithuania	-	-	-	-	1	1	n/a	n/a	-	-	-	-
Netherlands	6	2	60%	40%	8	0	75.0%	25.0%	4	0	75.0%	25.0%
Norway	11	0	83.3%	16.7%	5	2	100%	0%	7	1	100%	0%
Poland	11	8	66.7%	33.3%	6	4	100%	0%	3	0	100%	0%
Portugal	1	0	100%	0%	2	1	100%	0%	1	0	100%	0%
Slovenia	1	0	100%	0%	1	0	100%	0%	1	1	n/a	n/a
Spain	8	5	100%	0%	5	1	100%	0%	6	0	100%	0%
Sweden	5	4	100%	0%	11	4	100%	0%	11	1	100%	0%
Switzerland	13	7	83.3%	16.7%	9	1	75.0%	25.0%	5	0	100%	0%
United Kingdom	26	8	70%	30%	53	21	84.8%	15.2%	40	0	86.4%	13.6%
Total/Median	168	60	-	-	181	69	-	-	160	11	-	-



Table 6.11 - Basis for recoverable amount: distribution by industry

Industry	PP&E Recoverable amount				Intangible assets Recoverable amount				Goodwill Recoverable amount			
	Firms	Unspecified	VIU	FVLCD	Firms	Unspecified	VIU	FVLCD	Firms	Unspecified	VIU	FVLCD
Basic materials	20	6	80%	20%	18	12	83.3%	16.7%	5	0	66.7%	33.3%
Consumer goods	27	11	68.8%	31.3%	19	6	85.7%	14.3%	13	2	81.8%	18.2%
Consumer services	26	9	84.2%	15.8%	34	10	96.0%	4.0%	39	1	88.1%	11.9%
Healthcare	13	6	55.6%	44.4%	22	8	60%	40%	9	1	77.8%	22.2%
Industrials	30	12	78.9%	21.1%	25	8	82.4%	17.6%	39	4	94.4%	5.6%
Oil and gas	29	5	76.9%	23.1%	30	11	89.5%	10.5%	8	1	85.7%	14.3%
Technology	12	10	50%	50%	24	11	84.6%	15.4%	34	1	93.9%	6.1%
Telecommunications	2	0	100%	0%	3	1	100%	0%	1	0	100%	0%
Utilities	9	1	87.5%	12.5%	6	2	100%	0%	12	2	90%	10%
Total/Median	168	60	-	-	181	69	-	-	160	11	-	-

Based on IAS 36, if a company reports segment information in accordance with IFRS 8, then for each material impairment loss, it is required to disclose the reportable segment to which the asset belongs (IAS 36.130c). Therefore, for each of the three asset groups, we first assess the applicability of IFRS 8 disclosures and then examine the inclusion or not of impairment assets as part of reportable segments' information. However, given that this requirement applies to individual assets, our assessment relates only to the allocation of PP&E and (non-goodwill) intangible assets.

Our findings reveal that disclosures in this area suffer from most of the shortcomings noted above in relation to the allocation of impairment losses to segments. At the country level, we find various cases of non- or partial-compliance (e.g., companies from Estonia, Portugal and Slovenia in the PP&E asset class and Belgium, Estonia, Greece, Lithuania, Poland and Slovenia in the intangible assets category).

For PP&E, compliance scores are quite variable at the industry level, ranging from 23.1% in basic materials to full compliance in the telecommunications industry. The results are far less encouraging for intangible assets. Median compliance score for this asset class is 29.2% and the scores range from non-compliance in the telecommunications industry to a high of 33.3% in the utilities industry.



► CGU description and allocation of goodwill to CGUs

For each material goodwill impairment loss recognized during the period, IAS 36 requires the provision of CGU-related disclosures, including a description of each CGU (IAS 36.130d). Also, given that the goodwill impairment test is based on the allocation of goodwill to CGUs, IAS 36 requires the disclosure of the carrying amount of goodwill allocated to a CGU or group of CGUs. This allocation is important as it reflects judgments in attributing goodwill to different components of the business.

In spite of their significance in the goodwill reporting process, our findings reveal a fairly high degree of diversity in reporting outcomes in these two disclosure areas across both countries and industries. In a majority of cases, there is an absence of transparent qualitative information on the nature of decisions and judgments involved in defining CGUs and allocating goodwill to CGUs for impairment testing purposes. Equally important are the various instances of partial- and non-compliance that we document.

At the country level, our findings indicate non-compliance in sample companies in Belgium and Slovenia versus full compliance in sample companies in Austria, the Czech Republic and Spain. For the remainder of countries, compliance for both requirements is at best, modest. For example, in the case of disclosures on the description of a CGU, France and Germany each register compliance rates of 57.1% and 69.6% respectively, while companies domiciled in Greece (50.0%) and Norway (57.1%) exhibit somewhat lower compliance levels.

For the allocation of goodwill to CGUs, the index increases for most of the countries. But there are still many cases where compliance is low. Examples include Belgium (50.0%) and Norway (57.1%). We observe fairly similar results at the industry level with companies in the consumer goods and basic materials industries registering low scores of respectively 38.5% and 40% for the provision of CGU descriptions. Industry-level compliance for the allocation of goodwill to CGUs is not so variable, with scores ranging between 60% (basic materials) to full compliance (telecommunications).

► Impairment by asset class, segment and CGU

We analyze impairment-related disclosures for CGUs. As noted in section 3, IAS 36 requires disclosure of the amount of impairment loss recognized by class of assets and if applicable by reportable segment and by CGU (IAS 36.130d). Findings from our assessment of compliance in this category are summarized in tables 6.12 and 6.13.

We document significant differences in compliance levels for the two requirements. For disclosures relating to impairment by asset class or segment, we find several cases of non-compliance at both the country level (e.g., sample companies in the Czech Republic, Poland and Slovenia) and the industry level (basic materials and telecommunications). Results for other countries and industries are generally low as well (median country score of 20% and median industry value of 23.1%).

In further analyzing the results for this disclosure area, we consider whether each sample company provides disclosures under IFRS 8. In those cases where segment information is reported by the company, we find that the quality of disaggregated disclosures may have influenced the disclosure quality of CGU impairments by asset class or segment.



Table 6.12 - Impairment by asset class or segment and per CGU: compliance by country

Country	Goodwill IFRS compliance			
	Firms	Intensity	Impairment by asset class or segment	Impairment per CGU
Austria	3	3.20%	33.3%	66.7%
Belgium	2	0.32%	0%	100%
Czech Republic	1	0.53%	0%	100%
Denmark	4	4.42%	75.0%	50%
Estonia	-	-	-	-
Finland	9	4.16%	11.1%	88.9%
France	21	2.21%	28.6%	85.7%
Germany	23	1.81%	34.8%	73.9%
Greece	8	2.89%	12.5%	50%
Hungary	-	-	-	-
Ireland	-	-	-	-
Italy	11	1.00%	45.5%	90.9%
Netherlands	4	3.47%	50%	75.0%
Norway	7	5.80%	14.3%	42.9%
Poland	3	1.16%	0%	33.3%
Portugal	1	1.44%	0%	100%
Slovenia	1	0.00%	0%	0%
Spain	6	1.44%	66.7%	100%
Sweden	11	14.04%	20%	50%
Switzerland	5	5.19%	40%	60%
United Kingdom	40	11.02%	20%	60%
Total/median	160	3.89%	20%	70.3%

Table 6.13 - Impairment by asset class or segment and per CGU: compliance by industry

Industry	Goodwill IFRS compliance			
	Firms	Intensity	Impairment by asset class or segment	Impairment per CGU
Basic materials	5	5.19%	0%	40%
Consumer goods	13	2.25%	23.1%	69.2%
Consumer services	39	6.37%	30.8%	71.8%
Healthcare	9	8.78%	22.2%	66.7%
Industrials	39	3.20%	20.5%	71.8%
Oil and gas	8	3.80%	37.5%	37.5%
Technology	34	8.39%	33.3%	63.6%
Telecommunications	1	0.01%	0%	0%
Utilities	12	0.84%	25.0%	75.0%
Total/Median	160	3.89%	23.1%	66.7%

Disclosures on impairment per CGU register considerably higher rates of compliance at both the country and industry levels (median scores of 70.3% and 66.7%, respectively). The variation, nonetheless, persists with country-level scores ranging from non-compliance in the sample company from Slovenia, low compliance in Poland (33.3%) to full compliance in Belgium, the Czech Republic, Portugal and Spain. We find a similar pattern at the industry level where compliance ranges from 75% in the utilities industry to a low score of 40% in basic materials and an apparent absence of compliance in the telecommunications industry.



► Cash flow projections, growth and discount rates

For those companies that estimate the recoverable amount of CGUs based on VIU estimations, we follow the requirements of IAS 36 and evaluate the provision or otherwise and the quality of disclosures relating to assumptions on future cash flows, growth rates and discount rates.

These disclosures are relevant because they can potentially signal information on a company's perceptions in developing VIU estimates. Hence, they can allow users to gain a finer understanding of the judgments and estimates made in the impairment recognition process.

IAS 36 requires disclosures on a range of assumptions. We emphasize those that relate to: (a) key assumptions on which management has based its cash flow projections for the period covered by the recent budgets or forecasts, (b) the growth rate(s) used to extrapolate cash flow projections beyond the period covered by the recent budgets or forecasts and (c) the discount rate(s) applied to the cash flow projections (IAS 36.134d). Our primary aim is to establish the extent of provision of this information as part goodwill disclosures.

Analyzing by country and industry, with the exception of a few minor cases, we document high levels of compliance. While we observe information on discount rates in a majority of companies, uncertainty surrounding future economic conditions appears to have had an impact on companies' ability to generate detailed information on forecasts of future cash flows and growth rates. These effects are more pronounced in Greece, Italy and Poland with relatively low scores of 66.7% (66.7%), 54.5% (72.7%) and 66.7% (33.3%), respectively for disclosures on future cash flows (growth rates).

Industry-level results are consistent with this conclusion as median compliance scores for both cash flow projections and growth rates are considerably lower than that of discount rates. For cash flow projections, we find compliance to be lowest in the consumer goods (55.6%) and oil and gas (66.7%) industries while basic materials (50.0%), oil and gas (66.7%) and telecommunications (66.7%) constitute the lower end of the score range for disclosures on growth rates.

Compliance: the role of institutions and firm-level attributes

Evidence in the previous sub-sections indicates considerable variation in compliance with impairment disclosure requirements. We now turn to a simple examination of the determinants of compliance levels. We rely on two sets of factors: (i) country-level institutions and (ii) firm-level characteristics. This selection is motivated by results from prior studies that establish a role for both factors in shaping financial reporting practices and outcomes. In the final segment of this section, we use an alternative basis (i.e., judgment and effort) to examine differences in compliance attitudes.

To capture the role of institutions, we rely on the institutional classification of Leuz (2010). As noted in section 5, the factors included in this classification relate to the strength of countries' securities regulation, enforcement, capital market development, investor protection, disclosure and transparency of reporting practices. We follow our grouping of European countries into the three country-clusters of Leuz (2010) as outlined in table 5.3. Our prediction is based on the view that stronger institutions will motivate higher compliance. We also consider the role of firm-specific variables. This is due to the importance of accounting for those characteristics that shape compliance over and beyond that which is driven by country-level institutional forces. We test whether: (i) compliance levels vary across the three country-clusters, (ii) compliance levels increase with the strength of institutions and (iii) institutional factors and firm-level attributes play a role in explaining compliance.

To examine disparities in companies' impairment reporting quality across the institutional settings, we analyze variations in mean compliance scores across the three country-clusters. Our first set of results confirms the presence of statistically meaningful differences in the mean rank scores between at least two combinations of country-clusters in Europe. Additional pairwise analysis of country-clusters reveals that compliance by companies domiciled in cluster 1 countries is different and higher than that of companies in both cluster 2 and cluster 3 countries. We further find that overall compliance by companies in cluster 2 countries is not statistically different from those classified in cluster 3.³⁰

³⁰ Following results from the Shapiro-Wilk test of normality, we adopt the non-parametric Kruskal-Wallis, Mann-Whitney and Wilcoxon tests to assess differences in mean compliance scores across the three country-clusters.



These results confirm our prediction of uneven compliance levels across different institutional settings in Europe.³¹ They show that isolated changes in accounting and disclosure regimes are less likely to be effective if they are not coupled with simultaneous improvements in country-level institutions. The findings also lend partial support to the view that compliance increases with the strength of institutions and enforcement mechanisms.

Building on these results, we evaluate how compliance behavior is explained by both institutional factors and firm-specific attributes. We rely on evidence from studies that identify characteristics associated with companies' reporting practices. Findings from this strand of research highlight the importance of different factors as major determinants of compliance with disclosure rules in corporate reports. These attributes are explained below.

- ▶ **Size:** the size attribute of larger companies can create incentives for high compliance. Research shows that economically important large companies are more likely to comply with reporting standards. Large companies have more shareholders and are better positioned to afford the costs of increased disclosure. According to Bens et al. (2011), smaller companies are also less likely to be able to implement the complex requirements of impairment reporting fully.
- ▶ **Profitability:** prior studies (e.g., Lang and Lundholm, 1993) suggest that a firm's performance is positively associated with the extent of its disclosures. Recent evidence (e.g., Daske et al., 2012) shows that more-profitable companies are likely to have stronger incentives for providing reports that are relevant to outside investors. Given companies' incentives for informative reporting, there will be motives for compliance as well.
- ▶ **Leverage:** leverage may be relevant in explaining compliance. Companies with high levels of debt have higher agency costs and a greater demand for monitoring. If public disclosures provide debtholders with monitoring information, then high-leverage companies will have incentives for compliance. Findings in recent studies (e.g., Al-Shammari et al., 2008) support this view and indicate that IFRS compliance increases with the level of debt.
- ▶ **Audit:** evidence from prior research suggests that large audit firms fulfill an effective monitoring function in limiting managers' opportunistic reporting behavior. Street and Gray (2002), Brown and Tarca (2005) and more recently Hodgdon et al. (2009) support the favorable link between the type of audit firm and clients' quality of disclosure and compliance.
- ▶ **Cross-listing and foreign operations:** cross-listed companies may be subject to additional market pressure and regulatory monitoring, which can motivate higher compliance. Similarly, the nature of demand for information from international companies and the scrutiny they face in terms of compliance differs from those that operate solely at the national level (Cuijpers and Buijink, 2005). Evidence on the potential impact on compliance of cross-listing and foreign operations supports the proposition that cross-listed companies and those with overseas operations exhibit higher compliance (e.g., Street and Bryant, 2000).
- ▶ **Industry:** maintaining favorable comparability within an industry may be a potent motivating force for corporate managers. Therefore, companies can have incentives to follow common industry practice. But the evidence from IFRS studies so far indicates no association between industry type and level of compliance (e.g., Street and Bryant, 2000; Glaum and Street, 2003). Moreover, as Jaafar and McLeay (2007) suggest, country-specific effects are considerably greater than industry effects.
- ▶ **Ownership:** demand for information can vary with the level of ownership concentration. In companies with a highly dispersed investor base, greater asymmetries can increase demand for public disclosures. This view is consistent with Daske et al. (2012), who argue that companies with dispersed ownership are likely to have stronger incentives for transparency and informative reporting. Conversely, in companies that are controlled by individual investors, lower demand for public disclosure may lead to lower incentives for compliance as well.

³¹ Given that differences between the clusters stems from the nature of countries' economic/financial systems and/or the strength of their regulatory and enforcement regimes, our results may also provide support for conjectures on the dominant role of the type of financial system (outsider versus insider) in explaining and predicting the nature of demand for and supply of IFRS-type financial reports (see: Nobes, 1998).



- ▶ **Book-to-market (BTM) ratio:** if book value reflects economic value, including impairments, the book value of equity (BVE) and the market value of equity (MVE) are equal (BTM=1). The BTM ratio can deviate from one due to unrecognized impairments (BTM>1) or as a result of unrecognized increases in the value of assets or unrecognized intangibles (BTM<1). Therefore, a higher BTM ratio may suggest that the market is accounting for losses that are yet to be captured through the accounting system.³² Higher compliance with impairment reporting standards should result in the more timely recognition of economic impairments. Therefore, an inverse relation may hold between compliance levels and BTM.
- ▶ **Impairment intensity:** the relative materiality of impairment positions can influence compliance attitudes. As Heitzman et al. (2010) report, companies' propensity to disclose is positively associated with the materiality of the underlying economic phenomenon. Based on this argument, Chen and Gu (2010) find that companies with larger goodwill and goodwill impairment positions disclose more about the underlying impairment test. This leads us to question whether larger impairment positions result in additional effort to ensure compliance.

A summary of the operational definitions we use to test the relevance of firm-level attributes in explaining compliance levels is presented in table 6.14.

Table 6.14 - Operational definitions for firm-level attributes

Factors	Definition
Size	Natural logarithm of the market value of equity (WS07210)
Profitability	Net income before extraordinary items (WS01551) divided by total assets (WS02999)
Leverage	Total liabilities (WS03351) divided by total assets (WS02999)
Audit	Binary variable based on whether the auditor is a Big 4 firm
Cross-listing	Binary variable based on whether the firm is cross-listed in another market
Foreign operations	Percentage ratio of foreign sales (WS08731)
Industry	Nominal variable based on Industry Classification Benchmark (ICB excluding Financials)
Ownership	Closely held shares (WS05474) divided by common shares outstanding (WS05302)
Book-to-market	Book value of equity (WS03501) divided by the market value of equity (WS07210)
Impairment intensity	Asset impairment charge as a percentage of total assets (WS02999)

³²We note, however, that just as BVE may not be comparable across different countries even under uniform standards due to diversity in enforcement and compliance, MVE may just as well not be equally informative across countries as a result of differences in the capital market infrastructure.



Considering the three country-clusters and the set of firm-specific factors, we evaluate the relevance of forces that shape compliance with impairment disclosure requirements in Europe. To estimate a model, we use Autometrics™ as an automatic econometric model selection algorithm available through the PcGive package. The method begins by including all variables that we believe may be relevant in explaining observed compliance levels, i.e., the three institutional clusters and all firm-level attributes. This information provides the ingredients for setting up a general unrestricted model. The method then applies a reduction procedure, eliminating variables that are not statistically significant. This process continues until a simpler specific model is derived. Termination is based on our measure of marginal significance for the variables (Hendry, 1995; Doornik, 2008).³³

For the 324 sample companies included in our survey, results from Autometrics™ identify a model including six statistically significant determinants of compliance. The significant determinants of compliance recognized by the model are: (i) audit quality, (ii) industry (oil and gas), (iii) leverage, (iv) intensity of goodwill impairments, (v) size and (vi) being domiciled in a cluster 1 country.³⁴ This result is highly consistent with our predictions. It highlights the role of large international audit firms as a first-line constraint that encourages IFRS compliance. The findings on the oil and gas industry reflect the generally high degree of compliance observed in this impairment-intensive industry. The documented leverage effect are consistent with debtholders' demand for transparency in accounting information and the likely influence that borrowing relationships have on companies' incentives to comply with the requirements of IFRS. Companies with higher levels of goodwill impairment are also found to be in better compliance with the disclosure rules. Compliance also increases with firm size. This probably reflects the higher levels of institutional investor and analyst scrutiny that larger companies face. Instances of weak financial reporting in larger companies usually receive wider coverage and are interpreted as bad signals by the investor community. Finally, the significance of cluster 1 countries in the model underscores the relevance of a strong economic and institutional environment in promoting IFRS compliance.

Compliance: the role of judgment and effort

The analysis that we present in this sub-section is motivated by evidence on managers' tendency to favor the discretion offered by the impairment reporting process over systematic depreciation and amortization (Watts, 2003; Ramanna, 2008; Ramanna and Watts, 2012). The extent of discretion available to managers in recognizing impairment losses can have implications for compliance. To examine this issue, we propose a novel approach to the analysis of reporting requirements. Our approach is based on evaluating compliance behavior through the lens of "effort." This view rests on the premise that variations in compliance between different sets of reporting requirements are due to uneven degrees of effort required to satisfy them.

Based on our proposed approach, we classify impairment reporting requirements into two classes: (i) high-effort requirements and (ii) low-effort requirements. To assess its validity, we subject our proposed dichotomous classification to review by academic peers and a panel of subject matter professionals at Ernst & Young with audit expertise in the area of impairment reporting. The views we gather reflect on experience with companies and the actual effort exercised in the process of demonstrating compliance with different requirements. Our refined classification serves as a benchmark for testing the proposition on differences in compliance between the two classes of impairment reporting requirements. We predict that an inverse relation holds between the level of reporting effort and compliance.

Descriptive results on compliance levels for the three asset classes based on the proposed classification are presented in table 6.15. Data on mean compliance levels indicate considerable differences in disclosure compliance between the high- and low-effort reporting requirements. Our tests show that these differences are statistically significant.

³³ Autometrics™ is based on the general-to-specific (GETS) reduction theory of Hendry (1995). The model is often referred to as the London School of Economics (LSE) methodological approach to econometric modeling.

³⁴ The selected variables for the final model are all statistically significant at 5%.

Table 6.15 - Compliance scores by asset class: high-effort versus low-effort

Asset class	PP&E		Intangible assets		Goodwill	
	High	Low	High	Low	High	Low
Compliance	69.24%	89.80%	52.64%	86.11%	74.82%	88.80%
Number of requirements	6	11	7	13	13	18

We complement these findings with descriptive results based on bundles of requirements within each of the three asset groups. The disaggregation of the asset-level results is useful in that it uncovers low compliance with high-effort requirements that may be masked by high compliance with low-effort disclosures. Tables 6.16, 6.17 and 6.18 present findings on compliance levels within different groups of requirements in the PP&E, intangible assets and goodwill sub-samples.

Important differences in compliance emerge in the area of impairment-related disclosures for all three asset groups. For PP&E, compliance ranges between 88.70% (low effort) and 54.10% (high effort). The variation is greater in the intangible asset class where compliance ranges from 80.57% to as low as 37.33%. The differences are less pronounced

in the area of goodwill disclosures with compliance ranging between 86.53% and 73.77%. Again, formal statistical tests show that these differences are significant.

We find equally important variations in compliance levels within disclosures on key estimation assumptions in the intangible assets and goodwill classes which, due to their nature, are more likely to be influenced by measurement uncertainty. As noted in table 6.17, variation in compliance for intangible assets ranges from 94.03% (low effort) to 59.09% (high effort). The difference is slightly less pronounced in the goodwill category where compliance ranges from 91.89% to 62.92%. Again, high- versus low-effort differences in this category are statistically significant.

Table 6.16 - PP&E: compliance scores by bundles of IFRS requirements

Asset class	PP&E							
	Compliance scores: bundles of IFRS requirements							
Disclosure items	Summary of significant accounting policies		Key estimation assumptions		Reconciliation of opening and closing carrying amount		PP&E and impairment disclosures	
Effort level	High	Low	High	Low	High	Low	High	Low
Compliance	98.30%	100%	96.55%	95.17%	-	89.20%	54.10%	88.70%
Number of requirements	1	1	2	2	0	1	3	7



Table 6.17 - Intangible assets: compliance scores by bundles of IFRS requirements

Asset class	Intangible assets									
	Compliance scores: bundles of IFRS requirements									
Disclosure items	Summary of significant accounting policies		Key estimation assumptions		Change in accounting estimates		Impairment disclosures		Intangible assets	
Effort level	High	Low	High	Low	High	Low	High	Low	High	Low
Compliance	95.52%	100%	59.09%	94.03%	-	96.97%	37.33%	80.57%	-	84.08%
Number of requirements	1	1	2	2	0	2	4	7	0	1

Table 6.18 - Goodwill: compliance scores by bundles of IFRS requirements

Asset class	Goodwill							
	Compliance scores: bundles of IFRS requirements							
Disclosure items	Summary of significant accounting policies		Key estimation assumptions		Change in accounting estimates		Goodwill and impairment disclosures	
Effort level	High	Low	High	Low	High	Low	High	Low
Compliance	95.20%	99.40%	62.92%	91.89%	-	97.81%	73.77%	86.53%
Number of requirements	1	1	2	2	0	2	10	13

Summary

Findings from our survey of impairment reporting practices show that the nature and content of companies' IFRS disclosures are heterogeneous. For many of the disclosure areas that we analyze, there is considerable diversity in reporting practices. These diversities are present both across European countries and across industries. In explaining the differences, our results indicate the significance of institutions in shaping IFRS compliance. We identify firm-level attributes that are also important in explaining disparities in compliance levels. Our survey further reveals that disclosure quality declines markedly as the cost and effort associated with fulfilling compliance increases.

An implication of this finding is that, in assessing overall compliance with IFRS disclosure requirements, it is likely that high compliance with low-effort requirements will mask low compliance with high-effort requirements.

7. Toward improved impairment reporting in Europe

In this section, we present some brief recommendations for improving the quality and content of impairment disclosures. The proposals noted here are largely rooted in our observations of impairment reporting practices of European listed companies discussed earlier.

- ▶ **Accounting policies and judgments:** most companies appear to be in compliance with requirements on policies and judgments. In our view, however, there is room for improving the depth and content of disclosures in this area. We find largely identical policy and judgment notes for various non-current non-financial assets across companies operating in different countries and industries. Even for the non-English reports that we examine, in most cases, disclosures appear to be mere translations of standard boilerplate policy disclosures. Commonalities undoubtedly exist between accounting policies and judgments adopted by different companies, but we would also expect that the nature of these disclosures reflects diversity in the economic environments in which companies operate.
- ▶ **Estimation uncertainty and changes to past assumptions:** disclosures on estimation uncertainty and key assumptions about the future enable users to better understand reporting areas that are prone to subjectivity and sensitive to changing assumptions. In times of financial volatility and uncertainty, the likelihood of change to past assumptions increases. In our view, under these circumstances, the provision of information on key assumptions and their (in)stability is crucially important. The finding that disclosures on revisions to past assumptions, or justifications for their continued relevance, are frequently inadequate or absent arguably reduces the usefulness of companies' impairment disclosures and the perceived reliability of non-current asset valuations.
- ▶ **Sensitivity of carrying amounts:** these disclosures relate primarily to goodwill impairments. As noted in section 6, we document relatively low compliance levels in this area. Preparers must take into account that this may have implications for the perceived relevance of their goodwill information. Sensitivity disclosures provide users with a reasonable basis to form independent assessments about the reliability of valuations under alternative scenarios. Consequently, the inadequacy or lack of such disclosures may be interpreted as a negative signal as it can significantly hinder users' understanding of goodwill numbers.
- ▶ **Triggering events:** in many cases, we find that preparers do not explain the triggering event. To a certain extent, we also find boilerplate disclosures, but this is not as widespread as some of the other disclosure areas that we cover. Specific knowledge of the circumstances underlying the impairment loss is important. It broadens users' understanding about the justification of asset write-offs. It can also lead to revisions in their expectations about the future prospects of the company. Therefore, in avoiding additional user uncertainty, preparers should seek to ensure transparent and effective disclosure in this area.
- ▶ **Basis for recoverable amount:** we find cases where the adopted basis for recoverable amount is not explicitly specified (PP&E: 36%, intangible assets: 38% and goodwill: 7%). The selected bases will likely have a significant impact on asset positions reported on balance sheets. Therefore, given its potential relevance, we believe that care must be taken by both preparers and auditors in ensuring the transparent and effective communication of bases for recoverable amount.
- ▶ **Allocation of impairments to segments:** for a large number of companies that provide segment information, impairment losses are aggregated and jointly reported with segment depreciation and amortization charges. In fact, in some industries, this appears to be common practice. In our view, such reporting practices contradict the purpose of disaggregation. Results that are reported based on largely aggregated amounts will not offer a useful basis for gauging and comparing segments' performance. Another shortfall relates to cases where asset allocations to segments are complete, but impairment losses are not included in or explicitly reported as part of segments' results.



- ▶ **Allocation of assets to segments:** a problem we identify in this area relates to the absence of adequate disaggregation of information on impaired assets allocated to reportable segments. In many of the cases we analyze, segment assets are not itemized; they are presented as lump sum figures without any explanation on components of the aggregate amounts. This issue becomes even more complicated as a result of incomplete asset allocations to segments. These are cases where the main basis for disaggregation is noted to be on a business basis while the allocation of assets is carried out on the basis of geographical segments. Lack of clarity in identifying and disclosing the allocation bases and the opacity of disclosures on components of assets allocated to segments can adversely affect the usefulness of disaggregated disclosures.
- ▶ **Description of CGUs and allocation of goodwill to CGUs:** our analysis of goodwill-related disclosures reveals two issues that could be relevant to preparers' disclosure decisions in future periods. First, in many cases that we examine, there is a high degree of correspondence between the basis used to identify operating segments and the approach adopted to define CGUs. For instance, in most single-segment companies, we observe a single CGU for goodwill impairment testing. In such cases, potentially low reporting quality at the segment level appears to have influenced reporting outcomes for CGUs. Companies that identify CGUs on the basis of their segments must be aware of such effects and its potential consequences. Another issue relates to limited disclosures on judgments and subjective estimates underlying the goodwill allocation decision. Although the outcome of the estimation process may be disclosed quantitatively in relevant notes, preparers should note that what may matter more to users' understanding is the qualitative justification supporting allocation decisions, which in most cases we do not observe.
- ▶ **Cash flow projections, growth and discount rates:** for disclosures on cash flow projections, we find that a large proportion of companies provide information on the projection period as part of their assessments of future cash flows. This usually takes the form of a single forecast period, although we find minor cases where multiple or a range of forecast periods are adopted. A similar observation we make across most companies included in the goodwill sub-sample is that they generally adopt a single growth rate that does not exceed long-term average growth rates for the markets in which the CGUs operate. Again, we note that there are instances where the reporting entity applies multiple growth rates or even a range of growth rates for estimating VIU. As noted earlier, disclosures on discount rate(s) are extensive and of high quality. We find that a large percentage of compliant companies refer to the WACC when explaining the basis for determining the discount rate. But there are cases where the information has been difficult to interpret and analyze. For instance, there are companies that make no mention of the basis used for determining the adopted discount rates and simply state that their selection takes into account the time value of money and the risks associated with the CGU. Moreover, in spite of its wide usage across countries and industries covered by our goodwill sub-sample companies, it may be questionable that many companies adopt a single discount rate (e.g., a company-wide WACC) and apply this evenly to all CGUs regardless of differences that may exist in the risk profiles of each of the separately defined CGUs. Preparers should note that in light of differences in risk levels across the CGUs, the adoption of this approach may distort the results of their impairment testing process for goodwill and other assets allocated to CGUs.

8. References

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Appendix - Impairment disclosures: selected excerpts

This appendix includes selected excerpts from European companies' disclosures relevant to impairment reporting for the three classes of non-current non-financial assets that are of interest to us in this study. We present these disclosures to highlight examples of reporting practices that can be indicative of compliance and consistency with IFRS requirements for impairment reporting. The sample footnotes are presented as three cases and relate mainly to those disclosure areas outlined in IAS 36 and asset-specific reporting requirements covered in IAS 16, IAS 38 or IFRS 3. Case A illustrates sample disclosures for the impairment of PP&E. Case B presents a similar set of selected disclosures for intangible assets (other than goodwill). Case C outlines disclosures that are relevant to the impairment of goodwill.

Case A: Property, plant and equipment - Arctic Paper S.A., Poland

The sample excerpts below illustrate selected disclosures from the 2010 annual report and financial statements of Arctic Paper S.A. The footnotes presented here highlight some of the information disclosed on property, plant and equipment and the impairment of relevant non-current non-financial assets based on IFRS.

5. Significant professional judgements and estimates

5.2. Estimates and assumptions

Impairment of Fixed Assets in Arctic Paper Mochenwangen

At 31 December 2010 impairment test was conducted in the production company Arctic Paper Mochenwangen in respect to fixed assets and intangible assets. A detailed description of the impairment test is included in Note 25 of these financial statements.

Depreciation and amortisation rates

Depreciation and amortisation rates are determined based on the anticipated economic useful lives of property, plant and equipment and intangible assets. The economic useful lives are reviewed annually by the Group based on current estimates.

9. Summary of significant accounting policies

9.3. Property, plant and equipment

Property, plant and equipment are measured at cost less accumulated depreciation and impairment losses. The initial cost of an item of property, plant and equipment comprises its purchase price and any directly attributable costs of bringing the asset to working condition for its intended use. Cost also comprises the cost of replacement of fixed asset components when incurred, if the recognition criteria are met. Subsequent expenditures, such as repair or maintenance costs, are expensed in the reporting period in which they were incurred.

Upon purchase, fixed assets are divided into components, which represent items with a significant value that can be allocated a separate useful life. Overhauls also represent asset component.

Property, plant and equipment are depreciated using the straight-line method over their estimated useful lives.

Type	Period
Buildings and constructions	25-50 years
Plant and machinery	5-20 years
Office equipment	3-10 years
Motor vehicles	5-10 years
Computers	1-10 years

Residual values, useful lives and depreciation methods of property, plant and equipment are reviewed annually and, if necessary, adjusted retrospectively i.e., with effect from the beginning of the financial year that has just ended.

An item of property, plant and equipment is derecognised upon disposal or when no future economic benefits are expected from its further use. Any gain or loss arising on derecognition of an asset (calculated as the difference between the net disposal proceeds and the carrying amount of the asset) is recognised in the income statement for the period in which derecognition took place.

Assets under construction (construction in progress) include assets in the course of construction or assembly and are recognised at purchase price or cost of construction less any impairment losses. Assets under construction are not depreciated until completed and brought into use.



9.7. Impairment of non-financial assets

An assessment is made at each reporting date to determine whether there is any indication that an asset may be impaired. If such indication exists, or in case an annual impairment testing is required, the Group makes an estimate of the recoverable amount of that asset or the cash-generating unit that the asset is a part of.

The recoverable amount of an asset or a cash-generating unit is the higher of the asset's or cash-generating unit's fair value less costs to sell and its value in use. The recoverable amount is determined for an individual asset, unless the asset does not generate cash inflows that are largely independent of those from other assets or groups of assets. Where the carrying amount of an asset exceeds its recoverable amount, the asset is considered impaired and is written down to its recoverable amount. In assessing value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset. Impairment losses of continuing operations are recognised in the income statement in the expense categories consistent with the function of the impaired asset.

An assessment is made at each reporting date as to whether there is any indication that previously recognised impairment losses may no longer exist or may have decreased. If such indication exists, the Group makes an estimate of recoverable amount. A previously recognised impairment loss is reversed only if there has been a change in the estimates used to determine the asset's recoverable amount since the last impairment loss was recognised. If that is the case, the carrying amount of the asset is increased to its recoverable amount. That increased amount cannot exceed the carrying amount that would have been determined, net of depreciation or amortisation, had no impairment loss been recognised for the asset in prior years. Such reversal is recognised immediately in the income statement, unless the asset is carried at revalued amount, in which case the reversal is treated as a revaluation increase. After a reversal of an impairment loss is recognised, the depreciation (amortisation) charge for the asset is adjusted in future periods to allocate the asset's carrying amount, less its residual value (if any), on a systematic basis over its remaining useful life.

25. Impairment test of tangible and intangible assets

As at 31 December 2010 the Group performed impairment tests of tangible and intangible assets in the paper mill Arctic Paper Mochenwangen.

Impairment test in Arctic Paper Mochenwangen was performed in connection with lower than expected results generated by the paper mill in Mochenwangen. Financial results in Arctic Paper Mochenwangen were influenced by the market conditions including increase in prices of raw materials and intensification of competition in the segment of paper produced by Arctic Paper Mochenwangen.

With regards to the above indications the Group's Management made a decision to perform the impairment test using discounted cash flows method. The impairment test revealed impairment loss in the amount of PLN 16,186 thousand. Details regarding impairment test and its assumptions were presented in the following point.

The recoverable amount of the cash-generating unit selling AP Tech, L-Print and Pamo paper has been determined based on the value in use calculation using cash flow projections from financial budgets approved by the key management covering a five-year period from 2011-2015. The pre-tax discount rate applied to the cash flow projections is 10.3% and the cash flows beyond the five-year period are extrapolated using a 1.6% growth rate.

Key assumptions used in value in use calculations

The calculation of value in use for Arctic Paper Mochenwangen cash-generating unit is most sensitive to the following factors: Discount rates; Increase in sales prices; Increase in energy prices; and Currency risk. Discount rate represents the assessment made by the management of the risks specific to the cash-generating unit. The discount rate is used by the management to assess the operating efficiency (results) and future investment propositions. In the budgeted period the discount rate amounts to 8.1%. The discount rate was determined using the weighted average cost of capital (WACC).

Increase in raw material prices (primarily prices of pulp) - assessments of change in raw materials prices are made using the ratios published based on the data regarding pulp prices. The main source of data used as a base for assumptions is Internet site: www.foex.fi. It should be mentioned that pulp prices are featured with high volatility.

Increase in energy prices - increase in energy prices, in particular coal which is a basic source of the energy, results from the assumptions used in the projections approved by the local management of Arctic Paper Mochenwangen.

Currency risk - the risk relates to the purchase cost of raw materials used for production of paper, in particular to the purchase of pulp where costs are incurred mainly in USD. In the projected period the USD/EUR exchange rate was set at the level of 0.7143.

Main assumptions used in calculation of value in use are presented in the table below.

	Key assumption
Prognosis based on year	2011-2015
Income tax rate	27,40%
Pre-tax discount rate	10,32%
Weighted average cost of capital	8,10%
Growth in residual period	1,60%

The following table presents the impairment loss recognised as at 31 December 2010:

	Balance value as at 31.12.2010	Value in used by 31.12.2010
Tangible assets, therein:	72,969	56,783
▶ land	13,699	13,699
▶ buildings	1,754	1,269
▶ machinery and equipment	55,040	39,340
▶ assets under construction	2,475	2,475
Intangible assets	15,813	15,813
Working capital	19,671	19,671
Cash and equivalents	6,958	6,958
Total value	115,411	99,225
Impairment recognised in profit and loss, therein:	16,186	
▶ machinery and equipment	15,700	
▶ buildings	486	

The impairment loss amounting to PLN 16,186 thousand was recognised in consolidated income statement for the year ended 31 December 2010 in the position cost of sales.

Case B: Intangible assets (other than goodwill) - Faroe Petroleum, United Kingdom

The sample excerpts presented below are selected disclosures from the 2010 annual report and financial statements of Faroe Petroleum. These footnotes highlight some of the information disclosed on intangible assets (other than goodwill) and the impairment of relevant non-current non-financial assets based on IFRS.

2. Accounting policies

Oil and gas expenditure - exploration and evaluation assets

Capitalisation

Pre-acquisition costs on oil and gas assets are recognised in the Income Statement when incurred. Costs incurred after rights to explore have been obtained, such as geological and geophysical surveys, drilling and commercial appraisal costs and other directly attributable costs of exploration and appraisal including technical and administrative costs are capitalised as intangible exploration and evaluation ("E&E") assets. The assessment of what constitutes an individual E&E asset is based on technical criteria but essentially either a single licence area or contiguous licence areas with consistent geological features are designated as individual E&E assets.

E&E costs are not amortised prior to the conclusion of appraisal activities. Once active exploration is completed the asset is assessed for impairment. If commercial reserves are discovered then the carrying value of the E&E asset is reclassified as a development and production ("D&P") asset, following development sanction, but only after the carrying value is assessed for impairment and where appropriate its carrying value adjusted. If commercial reserves are not discovered the E&E asset is written off to the Income Statement.

Impairment

The Group's oil and gas assets are analysed into cash generating units ("CGU") for impairment review purposes, with E&E asset impairment testing being performed at a grouped CGU level. The current CGU consists of the Group's whole E&E portfolio. E&E assets are reviewed for impairment when circumstances arise which indicate that the carrying value of an E&E asset exceeds the recoverable amount. When reviewing E&E assets for impairment, the combined carrying value of the grouped CGU is compared with the grouped CGU's recoverable amount. The recoverable amount of a grouped CGU is determined as the higher of its fair value less costs to sell and value in use. Impairment losses resulting from an impairment review are written off to the Income Statement.



4. Asset impairment

Key assumptions used in the value-in-use calculations

The calculation of value-in-use for oil and gas assets under development or in production is most sensitive to the following assumptions:

- ▶ Production volumes;
- ▶ Commodity prices;
- ▶ Fixed and variable operating costs;
- ▶ Capital expenditure; and
- ▶ Discount rates.

Production volumes/recoverable reserves - Annual estimates of oil and gas reserves are generated internally by the company's reservoir engineers. These are reported annually to the Board in conjunction with an externally generated Competent Persons Report ("CPR"). The self certified estimated future production profiles are used in the life of the fields which in turn are used as a basis in the value-in-use calculation.

Commodity prices - Published forward prices for natural gas and Brent oil are used for the first three years of future cash flow and a flat real price thereafter, in accordance with the Company's corporate assumptions. Field specific discounts and prices are used where applicable.

Fixed and variable operating costs - Typical examples of variable operating costs are pipeline tariffs, treatment charges and freight costs. Commercial agreements are in place for most of these costs and the assumptions used in the value-in-use calculation are sourced from these where available. Examples of fixed operating costs are platform costs and operator overheads. Fixed operating costs are based on operator budgets.

Capital expenditure - Field development is capital intensive and future capital expenditure has a significant bearing on the value of an oil and gas development asset. In addition, capital expenditure may be required for producing fields to increase production and/or extend the life of the field. Cost assumptions are based on operator budgets or specific contracts where available.

Discount rates - Discount rates reflect the current market assessment of the risks specific to the oil and gas sector and are based on the weighted average cost of capital for the Group. Where appropriate, the rates are adjusted to reflect the market assessment of any risk specific to the field for which future estimated cash flows have not been adjusted. The Company has applied a discount rate of 10% for the current year (2009: 10%).

Sensitivity to changes in assumptions

For certain fields, a reasonably possible change in any of the above assumptions would cause the estimated recoverable value to be lower than the carrying value, resulting in a further impairment loss. The assumptions which would have the greatest impact on the recoverable amounts of the fields are production volumes and commodity prices.

Impairment losses

The asset impairment in 2010 of £5,896,000 (2009: £3,647,000) is primarily for the Glitne field (£3,852,000) (2009: nil) although the Schooner, Topaz, Wissey and Enoch fields have also been impaired to a lesser degree. The Glitne field operator's increase in estimated abandonment costs for Glitne account for the majority of the impairment. A revision in the reserve base for Topaz occurred when the Group moved from external to internal reserve estimates. The impairment on Wissey is due to a mismatch between the reserves used in the valuation calculation and those used in the depreciation calculation, due to a "back-out agreement" with the owners of the Horne & Wren fields nearby. Schooner was written down due mainly to a lower long term gas price and Enoch was written down due to small changes in reserve estimates.



Case C: Goodwill - Glaston Corporation, Finland

The sample disclosures presented below have been extracted from the 2010 annual report and financial statements of Glaston Corporation. The selected footnotes from this company highlight some of the key information that is disclosed for goodwill and its impairment as part of required disclosures for non-current non-financial assets under IFRS.

Note 1 - Summary of significant accounting policies

Goodwill

Goodwill represents the excess of the acquisition cost over fair value of the assets less liabilities of the acquired entity. Goodwill arising from the acquisition of foreign entities of acquisitions made after 1 January, 2004, is treated as an asset of the foreign entity and translated at the closing exchange rates at the end of the reporting period. Goodwill arising from the acquisitions of foreign entities made before 1 January, 2004, has been translated into Euros at the foreign exchange rate prevailing on the acquisition date.

Acquisitions made after 1 January, 2004, have been recognized in accordance with IFRS 3. Purchase consideration has been allocated to intangible assets, if they have met the recognition criteria stated in IAS 38 (Intangible Assets). Acquisitions made before 1 January, 2004, have not been restated to be in accordance with IFRS-standards. The revised IFRS 3 standard will be applied for business combinations made after 1 January, 2010. In accordance with IFRS 3 Business Combinations, goodwill is not amortized. The carrying amount of goodwill is tested annually for impairment. The testing is made more frequently if there are indications of impairment of the goodwill. Any possible impairment loss is recognized immediately in profit or loss.

Glaston's goodwill has been reallocated to reportable segments in 2010. Previously the estimated benefits to the segments arising from the One-Stop-Partner sales had an effect on the goodwill allocated to the segments. Currently Glaston no longer markets the One-Stop-Partner concept, which has resulted in reallocation of goodwill between the reportable segments. In addition, the change of IFRS standards in the beginning of 2010 resulted in a change the allocation of goodwill. The goodwill, which was previously allocated to the Machines reportable segment, had to be reallocated to the operating segments within the Machines reportable segment (Heat Treatment, Pre-processing and Tools).

Impairment of assets

Annual impairment tests for goodwill are performed during the fourth quarter of the year. If there is, however, an indication of impairment of goodwill, the impairment tests for goodwill are performed earlier during the reporting period. Other assets of the Group are evaluated at the end of each reporting period or at any other time, if events or circumstances indicate that the value of an asset has been impaired. If there are indications of impairment, the asset's recoverable amount is estimated, based on the higher of an asset's fair value less costs to sell and value in use. An impairment loss is recognized in profit or loss whenever the carrying amount of an asset or cash generating unit exceeds its recoverable amount. If subsequently recording the impairment loss a positive change has occurred in the estimates of the recoverable amount, the impairment loss made in prior years is reversed no more than up to the value which would have been determined for the asset, net of amortization or depreciation, had impairment loss not been recognized in prior years. For goodwill, a recognized impairment loss is not reversed.

Cash flow projections have been calculated on the basis of reasonable and supportable assumptions. They are based on the most recent financial plans and forecasts that have been approved by management. Estimated cash flows are used for a maximum of five years. Cash flow projections beyond the period covered by the most recent plans and forecasts are estimated by extrapolating the projections using a steady or declining growth rate. The discount rate is the weighted average cost of capital. It is a pre-tax rate and reflects current market assessments of the time value of money at the time of review and the risks related to the assets.



Note 13-Depreciation, amortization and impairment of assets

Impairment of assets

Glaston's cash generating units consist of reportable segments, generating cash flows, which are largely independent of the cash flows of other reportable segments. Glaston's goodwill has been reallocated to reportable segments in 2010. In addition, the goodwill allocated to the Machines reportable segment has been allocated further to the operating segments within the Machines reportable segment (Heat Treatment, Pre-processing and Tools).

Goodwill and intangible assets with indefinite useful life are tested annually in accordance with IAS 36 for impairment. Glaston does not have other intangible assets than goodwill with indefinite useful life and which are not amortized. Intangible assets not yet in use are also tested during the reporting period for impairment. Impairment testing is performed also always when there is indication that the recoverable amount of an asset or cash generating unit is lower than its carrying amount.

Goodwill has been tested for impairment by comparing the recoverable amount of the cash generating unit, to which the goodwill has been allocated, with the carrying amount of the cash generating unit. Impairment loss has been recorded if the recoverable amount is lower than the carrying amount. Consistent methods have been used in testing property, plant and equipment and intangible assets.

The recoverable amount of a cash generating unit is its value in use, based on its discounted future cash flows. These cash flows are mainly based on the budgets and estimates approved by the management. Budgets and estimates are used as a basis of the future cash flows for a maximum of five years. Subsequent cash flows are estimated by extrapolating the cash flow estimates. Terminal values have been calculated using Western European long-range growth rate if Western Europe has been considered to be the main market area of the cash-generating unit. If the main market areas are considered to have moved or to move over to other areas, such as Asia, where the estimated growth is expected to be higher than in the Western Europe, this growth have been taken into account in terminal value. This can be seen in the higher terminal year growth rates in these cash generating units. If the asset has been classified as held for sale, the recoverable amount used is the fair value of the asset, less costs of sale.

The assumptions used in value in use calculations are mainly the same as used in budgets. Cash flows based on the assumptions have, however, been adjusted so that the future cash flows used in impairment testing exclude any cash flows from uncommitted future restructuring, and cash flows arising from improving or enhancing the asset's performance. The cash flows of restructuring programs, in which the Group was committed at the date of the testing, are included in testing.

The assumptions used in impairment calculations, such as, for example development of markets and price development of products, are based on past experience and information gathered from external sources. Based on this information Glaston has arrived at the assumptions used in estimates. The cash flows are not expected to recover to the pre-recession level immediately but during several years. The fundamentals of the business are, however, expected to remain unchanged, so the development of the subsequent years is expected to be positive compared with 2010. If the recovery of the industry is further postponed or slows down, that will have a negative effect on the future cash flows. As the geographical focus of the business is moving toward areas with higher economical growth it balances the financial effects of a possibly slower recovery in Western Europe.

The profitability assumptions used in the impairment testing are based on the restructuring programs carried out as well as initiated during 2010, which are expected to result in significant cost savings. The cash flow effects of the restructuring programs are taken into account in the calculations. In addition, the effects of the ongoing net working capital improvement program during the forecast period have a positive impact on the estimated cash.

The discount rate used in arriving at recoverable amount is the pre-tax weighted average cost of capital, which reflects the market assessment of time value of money and risks specified to the assets and the countries where the segments operate. Also the industry's median capital structure has been taken into account in determining the discount rate as well as Glaston's cost of debt, which has increased from the previous year.

There are no major changes in the sources of information used in determining the discount rate. The importance of the different geographical areas has changed due to the change in the geographical focus of business. This has had an impact on defining the risk-free interest rates and country risk premiums.

Discount rates have been calculated separately for each operating segment, and they can vary between the segments. The discount rate of each segment depends, among other things, on the geographical allocation of cash flows in each segment as well as the relative importance of these cash flows. These can differ between the segments.

Discount rates of segments are not fully compared with the rates used in 2009 due to the changes in, for example, geographical allocation of cash flows in the segment, especially in the operating segments within the Machines segment. As the Software Solutions segment has remained unchanged, its discount rate is comparable.

The most significant assumptions used in value in use calculations in 2010	Machines: Heat Treatment	Machines: Pre-processing	Machines: Tools
Pre-tax discount rate	11.9%	13.2%	14.5%
Long-term growth rate	2.5%	3.0%	2.0%

The most significant assumptions used in value in use calculations in 2010	Services	Software Solutions	
Pre-tax discount rate	13.2%	12.4%	-
Long-term growth rate	2.0%	2.0%	-

The most significant assumptions used in value in use calculations in 2009	Machines	Services	Software Solutions
Pre-tax discount rate	12.9%	12.2%	10.9%
Long-term growth rate	2.0%	2.0%	2.0%

Impairment testing of goodwill

Glaston's goodwill has been reallocated to reportable segments in 2010. Previously the estimated benefits to the segments arising from the One-Stop-Partner sales had an effect on the goodwill allocated to the segments. Currently Glaston no longer markets the One-Stop-Partner concept, which has resulted in reallocation of goodwill between the reportable segments. In addition, the change of IFRS standards in the beginning of 2010 resulted in a change the allocation of goodwill. The goodwill, which was previously allocated to the Machines reportable segment, had to be reallocated to the operating segments within the Machines reportable segment (Heat Treatment, Pre-processing and Tools).

2009 impairment testing of goodwill was performed using the goodwill allocated to the segments at the time the tests were performed.

Goodwill (EUR million)

Segment	Allocated in 2010	Impairment loss	31 December, 2010
Machines			
Heat Treatment	4.1	-	4.1
Pre-processing	19.0	-5.8	13.2
Tools	5.7	-	5.7
Services	16.8	-	16.8
Software Solutions	12.8	-	12.8
Total	58.4	-5.8	52.6

Segment	Allocated in 2009	Impairment loss	31 December, 2009
Machines	43.1	-6.4	36.8
Services	10.7	-1.4	9.3
Software Solutions	12.3	-	12.3
Total	66.2	-7.8	58.4

Sensitivity analysis

The recoverable amounts used in impairment testing are subject to change if the assumption used in calculation of the recoverable amounts changes.

The management estimates, that in most cases, a reasonably possible change in a key assumption of the Services and the Software Solutions segments as well as in the Heat Treatment and Tools operating segments within the Machines segment does not cause the cash generating unit's carrying amount to exceed its recoverable amount. The cases in which a reasonably possible change in a key assumption would cause the carrying amount of a cash generating unit to exceed its recoverable amount are presented below.

The recoverable amounts of these cash generating units exceed their carrying amounts by 117 percent in the Services segment, by 43 percent in the Software Solutions segment, by 21 percent in the Heat Treatment operating segment and by 24 percent in the Tools operating segment.



A change in an assumption which, other things being equal, would cause the recoverable amount to equal the carrying amount is presented in the table below.

Post-tax discount rate*	Value assigned to the assumption	Change
Services	10%	Increase of 3.5 percentage points
Software Solutions	9.5%	Increase of 3.25 percentage points
Heat Treatment	10%	Increase of 1.5 percentage points
Tools	11.1%	Increase of 2.5 percentage points

Long-term growth rate*	Value assigned to the assumption	Change
Services	2.0%	Decrease of 5.5 percentage points
Software Solutions	2.0%	Decrease of 4.75 percentage points
Heat Treatment	2.5%	Decrease of 2 percentage points
Tools	2.0%	Decrease of 3.5 percentage points

*The consequential effects of the change in the assumption on other variables used to measure recoverable amounts have not been incorporated in the sensitivity analysis.

The sensitivity analyses of the Pre-processing operating segment within the Machines segment have been performed by calculating the effect of the possible changes in the key assumptions on the impairment loss of goodwill recognized. Glaston's management estimates that there are no grounds to perform the goodwill impairment testing in the Pre-processing operating segment using fair value less costs of sale instead of value in use.

Sensitivity analysis of the Pre-processing operating segment

Assumption	Change in assumption	Increase in impairment loss of goodwill, EUR million
Post-tax discount rate*	+0.5 percentage points	EUR 2.0 million
Long-term growth rate*	-0.5 percentage points	EUR 1.5 million

*The consequential effects of the change in the assumption on other variables used to measure recoverable amounts have not been incorporated in the sensitivity analysis.

Note 5-Segment information

Goodwill, depreciation, amortization and impairment losses by segment

	2010	2009
Goodwill, EUR million:		
Machines	23.0	36.8
Services	16.8	9.3
Software Solutions	12.8	12.3
Segments total	52.6	58.4

	2010	2009
Depreciation and amortization by segment, EUR thousand:		
Machines	4,017	3,736
Services	633	1,339
Software Solutions	1,949	2,020
Segments total	6,599	7,094
Unallocated	909	1,304
Total depreciation and amortization	7,508	8,398

	2010	2009
Impairment loss and reversals of impairment loss of property, plant and equipment and intangible assets, net*		
Machines	6,572	7,479
Services**	907	2,607
Software Solutions	-633	1,167
Segments total	6,846	11,253
Unallocated	186	1,200
Total impairment losses	7,032	12,453

*Includes impairment loss of goodwill

**Includes EUR 0.7 million impairment losses arising from non-current assets held for sale

