Reviewing goodwill accounting research: 
What do we really know about IFRS 3 and IAS 36 implementation effects?

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Abstract

We review more than 30 studies from 2008-2016 from three groups: first, studies testing the value relevance of goodwill, other intangible assets and impairment; second, studies investigating explanatory factors for recognition of these assets and expenses; and third, studies of compliance with IFRS 3 and IAS 36 disclosure requirements. We examine the research designs used to identify strengths and weaknesses in the studies and we investigate the impact of data and model selection on the evidence presented. We are interested in the extent to which studies report results that are consistent over time and between IFRS adopting countries. Our review aims to reveal where we can draw confident conclusions about the effects of applying IFRS 3 and IAS 36 and where evidence is not clear and further work remains to be done. Thus, our paper aims to assist academics and practitioners to gain a better understanding of the research evidence and to identify opportunities for future research.

Keywords: Business combinations, intangible assets, goodwill, impairment, IFRS 3, IAS 36, IASB post implementation review.

JEL: M41.
1. Introduction

The aim of our paper is to provide a synthesis of existing literature to identify where research provides strong evidence on the topic of accounting for goodwill after implementation of International Financial Reporting Standards (IFRS). We propose that strong evidence is provided when studies, which are based on appropriate samples and methods, provide consistent results across countries and over time. As part of our analysis, we also identify research gaps and thus opportunities for future research.

Accounting for goodwill is important and controversial. Recognized goodwill often represents the single largest item on a company’s balance sheet (Boennen and Glaum, 2014). Accounting for business combinations has changed dramatically with the release by the U.S. Financial Accounting Standards Board (FASB) of Statement of Financial Accounting Standards (SFAS) 141 Business Combinations and SFAS 142 Goodwill and Other Intangible Assets in June 2001 (FASB, 2001a; FASB, 2001b). Similar requirements were introduced in IFRS 3 Business Combinations, which applied from January 2005 for European Union listed companies’ consolidated accounts and in other countries that subsequently adopted IFRS, including Australia, Canada and Malaysia (IASB, 2015). Notable aspects of IFRS 3 were abolishing the pooling of interests method and goodwill amortization and adopting an impairment-only approach for goodwill and some other intangible assets. IAS 36 Impairment, adopted from 2005, applies to impairment.

There are many concerns about goodwill accounting under IFRS 3 ad IAS 36. Some state that accounting for goodwill and impairment involves judgements and estimates and is therefore very challenging and time consuming (e.g. Masters-Stout et al., 2008; Bloom, 2009). Others consider managers may use the discretion in the accounting standards to opportunistically manage earnings (see Boennen and Glaum, 2014). This could lead to lower quality accounting information and thus reduce positive outcomes from adoption of IFRS. Regulators have expressed concerns about the rigour of application of IAS 36 and the adequacy of disclosures (ESMA, 2013).

The IASB completed a post implementation review (PIR) of IFRS, including a review of the relevant academic literature by Piombino and Tarca (2014). The authors presented evidence generally showing the usefulness of reported goodwill, other intangible assets and goodwill impairment for IFRS firms. Some studies pointed to the possible impact of managerial incentives on impairment recognition. Nevertheless, the authors concluded that goodwill and impairment recognition was conveying some relevant information although there were areas that could be improved such as disclosures about impairment testing.
Three other academic literature reviews focus on studies of both US GAAP and IFRS firms (Boennen and Glaum, 2014; Wersborg et al., (2014); Wen and Moehrle (2015)). In contrast to these reviews, we focus on the IFRS literature. We argue in this paper that there are notable variations in the institutional settings for financial reporting in the U.S. and in IFRS adopting countries, thus raising questions about the comparability and generalizability of the evidence. Thus to meet the purposes of our paper, our conclusions are based on the strength of the evidence arising from IFRS jurisdictions. An extensive review of IFRS studies (ICAEW, 2015, 11-18) described various challenges for researchers who want to explore the impact of IFRS, relating to sample selection, methods of analysis and interpretation of the evidence. The study highlighted the difficulties of comparing the evidence across countries, which we also address in our paper.

We review papers published in the 2008-2016 period and analyze the findings based on the research designs employed to identify strength and weaknesses in the studies that are introduced by the design choices. We investigate the impact of time period and country of origin on the evidence presented. A matter of interest is the extent to which studies report results that are consistent over time and between countries. We focus on studies that are published in high ranked academic journals to base our analysis on studies that demonstrate academic rigor. First, we review studies exploring the value relevance of goodwill and other intangible assets. Second, we explore the evidence about explanatory factors for recognition of goodwill, other intangibles and impairment expense; and the predictive ability of recognized intangibles and the timeliness of impairment recognition. Third, we look at studies of compliance with the disclosure requirements of IFRS 3 and IAS 36.

Our paper contributes to the literature in three ways. First, we add to knowledge about the implementation of IFRS goodwill accounting by reviewing the latest research. With longer time series of data, in the ten years since adoption in 2005, the latest research may provide new insights and evidence of stronger relationships than can be distinguished from the effects observed in studies of first time adoption in 2005. Second, we review literature focusing on the research designs used. This enables us to differentiate findings and provide new insights about possible reasons for the differences identified. In addition, we are able to explore differences in findings based on time periods and countries of analysis. Third, we identify strengths and weaknesses connected to specific research designs in order to point to future research opportunities for academics. Our analysis also aims to assist standard setters, regulators and other practitioners to better understand the implications of research findings about accounting for goodwill. Our review aims to reveal, first, where we can draw confident conclusions about the effects of applying IFRS 3 and IAS 36 and second, where evidence is

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1 In the Appendix we provide a list of papers published in other journals and a list of working papers that were publicly available at June 2016. We refer to individual working papers when they are relevant to our statements about future research opportunities but generally we do not include the evidence of the working papers because it may change prior to publication.
not clear and further work remains to be done.

The rest of the paper is organized as follows. Section 2 provides a brief description of IFRS 3 and IAS 36. Section 3 outlines the journal selection process and our research method for obtaining and reviewing studies. Section 4 defines, describes and analyzes the selected set of value relevance studies. Section 5 reviews studies that investigate explanatory factors for the recognition of goodwill, other intangible assets and impairment of these assets. Section 6 reviews studies about compliance with disclosure requirements of IFRS 3 and IAS 36. Section 7 concludes and suggests opportunities for future research.

2. Background and method

2.1 Background on IFRS 3 and IAS 36 implementation

The Business Combinations project was part of the initial agenda of the IASB when it was formed in 2001 (IASB, 2015, p. 11-12). Accounting for business combinations had been previously identified as an area of significant divergence within and across jurisdictions. The FASB was also conducting a project on business combinations. In June 2001, the FASB issued SFAS 141 Business Combinations and SFAS 142 Goodwill and Other Intangible Assets, which removed the pooling of interests method and replaced the amortization of goodwill with a goodwill impairment test (FASB, 2001a; FASB, 2001b). The IASB received numerous requests from Europe and Australia to make similar changes to the accounting for goodwill. The IASB began reviewing IAS 22 Business Combinations (revised in 1998) with the objective of improving the quality of business combination accounting and promoting international convergence in the area. The main standard-setting decisions made by the IASB in IFRS 3 (2004) and in the revised versions of IAS 36 and IAS 38 include the following:

- the acquisition method is the only method of accounting for business combinations;
- separate recognition from goodwill of identifiable intangible assets;
- indefinite-life intangible assets and goodwill are no longer amortized but are instead tested annually for impairment; and
- negative goodwill is recognized by the acquirer in profit or loss.

The potential impact of IFRS 3 and IAS 36 is widespread. The IASB states that in 2015 116 countries required the use of IFRS by public companies. Among them are 42 countries in Europe, 27 in the Americas, 24 in Asia-Oceania, 15 in Africa, and eight in the Middle East (Pacter, 2015). The application of IFRS 3 and
IAS 36 (revised 2004) became mandatory for public companies in the European Union and in Turkey on 1 January 2005 (IASB, 2005; Agca and Aktas, 2007). Australia adopted IFRS from this date (Chalmers et al., 2008); Canada adopted in 2011 (Jordan and Clark, 2015) followed by Malaysia in 2012 (Abuaddous et al., 2014). All these countries and any others identified as adopting IFRS in 2005 or subsequent years are included in the sample of countries from which studies are drawn.

2.2 Journal selection and research method

We conducted a systematic literature review consistent with Tranfield et al. (2003), who regard a literature review as a key tool in managing the diversity of knowledge for a specific academic inquiry. First, we identified keywords and search terms for the systematic search in the titles and abstracts of the papers in the selected journals and in Google Scholar. The search string consisted of the journal name and the terms ‘IFRS 3, IAS 36, goodwill, impairment, amortization/amortisation, business combination, discount rate’ combined by an <OR> syntax. Referring to Piombino and Tarca (2014), we considered those studies already identified and added new publications starting in 2013.

In a second step, we excluded editorials, book reviews, comments and replies from the sample. The third step involved assessment of the quality of the studies as recommended by Tranfield et al. (2003). Using only refereed papers in academic journals rated in quality rankings was taken as a proof of high quality as commonly understood in management research (Tranfield et al. 2003). For the journal selection we use three internationally recognised journal rankings, the UK Association of Business School Academic Journal Guide, the Australian Business Deans Council (ABDC) ranking and the German VHB-JOURQUAL 3 ranking by the German Academic Association for Business Research.2 We use the A-, B- and C-ranked academic journals in the ABDC ranking and the A-, B-, and C-ranked academic journals of the VHB-JOURQUAL 3 ranking. In fact, we found various studies about goodwill accounting in countries throughout the world in journals that are not covered by these well established rankings.3 The final data set comprised 39 papers in 25 academic journals for the publication period 2008-2015 (including early 2016). We discuss the papers collected in the next three

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sections of our paper.4

3. Value relevance of goodwill, other intangible assets and amortization/impairment

3.1 Definition and types of value relevance studies

Value relevance refers to statistical tests of the association of an amount of an item recognized or disclosed by a company (such as goodwill, other intangible assets or impairment expense) and its share price (market value) or market return, for a sample of companies during one year or over a number of years. Views differ on whether the findings of value relevance studies are useful in helping to set financial reporting requirements. However, we follow the approach of Holthausen and Watts (2001) and Barth et al. (2001) and interpret value relevance as at least an indicator of increased transparency. Many studies explore the impact of mandatory IFRS adoption for EU companies and there is substantial variation in the findings. ICAEW (2015, 30-41) reports on 14 pan-European studies. The clear majority (10 out of 14) find some increase in value relevance after IFRS adoption, with the increase more likely for earnings than for the book value of equity. The results are more mixed for single-country studies and for specific accounting items.

The general IFRS value relevance studies apply well-established research designs that have been used to measure the value relevance of US GAAP accounting information. Most studies apply the so-called association approach, that is, using the Ohlson (1995) model to explain market prices or returns based on the book value of assets and income. Studies also refer to Barth et al. (2001) in decomposing some items to test the value relevance of specific line items such as goodwill. Most studies (11 of 13 studies) we analyzed for this review apply a variation of the Barth et al. (2001) value relevance model. The studies vary on the following dimensions: the years included; the firms and countries included; and whether book value of goodwill, goodwill amortization or impairment is analyzed. When studies consider goodwill and other accounting items, we discuss only the results related to goodwill accounting. In general, the research expectations in the studies can be stated as follows: Recognized goodwill and other intangible assets should be value relevant (i.e. amounts are positively associated with share price); and impairment expense should be value relevant, if the item contains new information.

Based on the studies selected, we distinguish three types of association studies:

4 Following the ABDC Journal Quality List 2013 we have identified papers rated 12*A; 13*B, 11*C; following VHB Jourqual3 2012 we have identified papers rated 3*A, 7*B, 16*C; following the UK Academic Journal Guide we have identified papers rated 10*3, 17*2.
- First, studies comparing the effects of the transition from local GAAP to IFRS in 2005. We name them “2005 transition models”.
- Second, studies comparing the effects of the change from local GAAP to IFRS including several financial years before and after the transition to IFRS. We name them “pre/post IFRS models”.
- Third, studies analyzing the value relevance of IFRS accounting information for one or more years after adoption. We name them “post-IFRS models”.

Two studies did not use the Barth et al. (2001) framework but applied an event study approach to look at the association between returns and specific goodwill accounting disclosures. We have described these studies under the heading “other models.” In Table 1 we list the studies, showing the countries and time period, the research design used and the main findings in relation to goodwill accounting (in italics).

[ Insert Table 1 about here ]

3.2 The 2005 transition models

The first set of studies analyzes IFRS adoption effects by comparing national GAAP and IFRS data in the transition period (Table 1 – 2005 transition models). Aharony et al. (2010) considered 2,298 companies from 14 EU countries on transition to IFRS in 2005 (excluding early voluntary adopters) by comparing data for 2005 and 2006. They applied the Barth et al. (2001) interpretation of the Ohlson (1995) price and return regression models to measure value relevance of specific items including goodwill. They reported an increase in the value relevance of goodwill, which was larger in countries where national GAAP differed more from IFRS.

Further evidence is presented in single country studies for Australia, Spain and the UK. Chalmers et al. (2008) studied 599 Australian firms on transition to IFRS. They found that goodwill and goodwill impairment were more value relevant under IFRS 3 than prior national GAAP. They applied the Ohlson/Barth price regression model. In a subsequent study, Chalmers et al. (2012) concluded that IFRS 3 measures of goodwill were more useful for investors (than prior national GAAP measures of goodwill), based on an analysis using accuracy of analysts’ forecasts.

Martínez and Martínez (2014) analyzed the value relevance of the IFRS reconciliation adjustments compared to local GAAP for 72 Spanish firms in the transition year. First, they assessed overall value relevance
by applying the Ohlson (1995) model. Then they investigated the impact of disaggregated individual adjustments in firms’ 2005 financial statements by decomposing nine different accounting adjustment components, including adjustments for business combinations and intangibles (including goodwill). Their findings on overall value relevance showed that book value or equity and net income numbers according to IFRS were not superior to those according to local GAAP for the transition year. However, investors found some disaggregated information value relevant, for example, goodwill impairment information.

AbuGhazaleh et al. (2012) used a sample of 528 firm-year observations, drawn from the largest 500 UK listed firms for 2005 and 2006, to assess the value relevance of goodwill impairment losses following the adoption of IFRS 3. They used the Lapointe-Antunes (2009) application of the Ohlson (1995) model. They found a significant negative association between reported goodwill impairment losses and market value.

Overall, we find some consistencies in the results of transition value relevance studies. Studies comparing national GAAP and IFRS data for the same financial year in the transition period (usually 2005 or 2006 financial data) pointed to an increase in value relevance in this period. All studies use a comparable technique to measure value relevance, that is, the Ohlson (1995) price or/and return regression models. Thus, IFRS seems to be more value relevant than former GAAP for goodwill accounting. However, some caveats apply. Aharony et al. (2010) found that the increase in value relevance was greater when the difference between a country’s national GAAP and IFRS was larger. Martínez and Martínez (2014) did not find an overall increase in value relevance although they did observe an increase for some of the decomposed component information.

3.3 Pre/post IFRS models

To learn more about long-term effects of IFRS, the next set of studies compared the value relevance before and after the implementation of IFRS over a longer period (Table 1 – Pre/post IFRS models). Sahut et al. (2011) found that goodwill and other intangible assets were positively associated with share prices for listed firms (n = 1,855) from 10 European countries (UK, France, Sweden, Italy, Finland, Spain, Norway, Belgium, Luxembourg and Ireland). They applied a dataset for 2002-2007 financial years and used the Ohlson (1995; 2001) price model to measure value relevance. They found that capitalized goodwill was less relevant under IFRS than under local GAAP. The authors concluded that the separate recognition of identifiable intangible assets provided more useful information than when unidentified intangible assets had been recognized in goodwill. However, the results did not hold for firms from Italy and Finland. The authors reported that Italian investors were of the opinion that goodwill conveys more pertinent information than other intangibles. The
Informational value of goodwill compared to other intangibles assets is markedly elevated for Finnish investors before and after IFRS implementation.

Ji and Lu (2014) analyzed 6,650 firm-year observations for Australian-listed firms with capitalized intangible assets from 2001 to 2009. The Ohlson (1995) price and return models were employed to test the value relevance and reliability of intangibles, considering the book value of goodwill and goodwill amortization or impairment. The main result showed that capitalized intangible assets (including goodwill and other intangible assets) and goodwill amortization or impairment were value relevant in Australia, in both the pre- and post- adoption of IFRS periods. Value relevance was higher in firms with more reliable information about intangible assets. The authors concluded that, overall, the value relevance of intangible assets declined in the post-adoption IFRS period.

Considering listed companies (n = 354 firm-years, non-finance sector companies) in Portugal during the period 1998 to 2008, Oliveira et al. (2010) analyzed the impact of IFRS on the value relevance of intangible assets. They reported an overall increase in the value relevance of recognized intangible assets (goodwill, other intangible assets and recognized research and development expenditures) under IFRS. Considering subclasses of identifiable intangible assets (intellectual property and other rights, research and development expenditures and other intangible assets), they did not find a change in the value relevance of identifiable intangible assets. They found an increase in the value relevance of goodwill, which they attributed to the change from amortization to the impairment-only approach for goodwill. They reported an increase in value relevance for other intangible assets and found evidence suggestive of an increase for research and development expenditures.

Hamberg and Beisland (2014) completed a pre and post implementation study for Sweden. They based their model on Aharony et al. (2010) but also included goodwill impairment in their analysis. Their sample included 2,052 firm-year observations for the 2001 to 2010 financial years. Hamberg and Beisland (2014, 67) concluded that “the goodwill balance has remained as a significant determinant of the market value of equity”. However, the value relevance of impairment expense had declined and was not value relevant under the IFRS regime.

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5 Ji and Lu (2014), p. 196, combine total tangible assets (TTA) and total liabilities (TL) into a single variable (TTA – TL) to measure the tangibility (solidity) of a firm’s assets. They apply this measurement to assess the reliability of information on intangibles. The authors propose that investors believe that the information on intangibles is more reliable in firms where the value of TTA is greater than the value of TL because these firms have less incentive to inflate the value of intangible assets.
Considering 507 UK listed non-financial firms over a period from 1997 to 2011 Amel-Zadeh et al. (2013) found goodwill impairment expense (under IFRS 3) was negatively associated with market value while goodwill amortization (under prior UK GAAP) was not. They applied the Ohlson (1995)/ Barth et al. (2001) model to measure value relevance. The authors reported a significant negative association between impairment and market returns and, in particular, current year stock returns and next year’s impairment expense. The authors concluded that impairment expense provided relevant information because it was related to economic fundamentals. However, they found that value relevance of impairment expense declined in subsequent years and was not observed for loss firms. In addition, following the adoption of IFRS the value relevance of earnings and prior goodwill increased. In contrast, the value relevance of impairment expense decreased because investors seemed to have assigned higher reliability to the more stringent impairment test under UK GAAP compared to IFRS.

The pre/post IFRS models with longer time periods provide evidence that recognized goodwill is value relevant. These studies use similar models and include some of the observations that were included in the transition year studies. Thus, the studies examined in this section increase our confidence in the claim that goodwill has greater value relevance under IFRS. However, the evidence about value relevance of goodwill impairment was very mixed. In addition, there was evidence that other factors influenced value relevance such as the quality of the related disclosure. Amel-Zadeh et al. (2013) did not confirm value relevance of goodwill impairment for loss firms. In our view, it is probable that loss firms have already informed the market about major impairments and the loss situation before the release of the annual financial report. Accordingly, the Ohlson model might not be appropriate to capture the relevance of this line item under these circumstances.

3.4 Post-IFRS models

Rather than focusing on the changes in value relevance between former national GAAP and IFRS, the third set of studies analyze value relevance after the implementation of IFRS (Table 1 – Post-IFRS models). Despite the focus on the post adoption period, transition effects from the first years of IFRS application may continue to affect the results of these studies.

For a sample of EU listed firms (France, Germany, Italy, Portugal, Spain and the UK, n = 835) during the years 2008-2011 Laghi et al. (2013) showed that goodwill was positively associated with share prices and goodwill impairment expense was negatively associated with share prices. They based their model on the AbuGhazaleh et al. (2012) approach; however, they modified the model to add a further explanatory variable,
a measure of the default risk of the country where each company operates to proxy for general influences on stock prices. The model suffered from some econometric shortcomings, for example some basic assumptions of the ordinary last squares regression models regarding non-normality of residuals and misspecification were not verified. The analysis of year, industry and country of domicile subsamples showed that goodwill impairment was significant only for two years (2008 and 2009) and for French listed companies across all periods. The authors concluded that value relevance of the impairment test of goodwill increases during periods of negative stress of financial markets. In addition, this effect might mitigate country differences affecting investors’ sensitivity to the main balance sheet items of firms.

Baboukardos and Rimmel (2014) provide some empirical evidence in a post implementation study for Greece. Applying the Ohlson (1995)/ Barth (2001) model for 76 companies, they found goodwill to be value relevant in general. However, they added a measure of disclosure to proxy for companies’ levels of compliance with IFRS 3 and IAS 36 disclosure requirements and found a significant interaction with this variable. The authors concluded that higher levels of disclosure enabled investors to better interpret the accounting numbers when predicting future performance. In contrast, lower disclosure levels were interpreted with lower investor’s expectations of future benefits; in these cases, goodwill was not expected to be value relevant. The two post-IFRS models therefore provide some insights into the conditions where we can expect to observe value relevance.

3.5 Other models considering usefulness of goodwill accounting

Two studies consider the usefulness of goodwill accounting from another perspective (Table 1 – Other models). Knauer and Wöhrmann (2015) examined the information content of goodwill impairments according to IAS 36 and SFAS No. 142 using a sample of 564 goodwill impairment announcements issued in the period 2005-2009 by EU and US companies. Using an event-study research design they reported a negative capital market reaction to announcements of unexpected goodwill write-offs, indicating this information was value relevant. In addition, investors reacted more negatively when a country’s level of legal protection was lower and when the management’s explanation was not verifiable.

Some have questioned how investors and others interpret impairment information. For example, Hamberg et al. (2011) analyzed the relation between abnormal returns and abnormal earnings for goodwill-intensive versus other firms in a seven-month transition window surrounding the adoption of IFRS 3. Considering 226 Swedish firms, they found that firms with abnormally high amounts of goodwill yielded
abnormally high share market returns, despite abnormally low reported firm earnings. The authors rationally expected higher returns to be associated with higher earnings, not the reverse. They then questioned whether the results suggested that market participants had interpreted the increase in earnings after adoption of IFRS 3 as an indication of higher future cash flows. The authors pointed to a possible misunderstanding by users of the impact on earnings of the change from amortization of goodwill to impairment of goodwill. However, the amount of goodwill itself was shown to be value relevant for investors.

3.6 Discussion - Value relevance of goodwill accounting

We now comment on some ways in which the models discussed above could be developed to better capture the underlying economics of the research setting. In addition, we propose some alternative design approaches and statistical methods.

3.6.1 First time adoption effects

An important issue for researchers is that the transition years may not be representative of other years because of IFRS first time adoption effects. This is especially relevant for the 2005 transition models but can still be the case in longer time period settings. This adoption effect may stem from (a) accounting options, (b) firms’ communication strategies and (c) managers’ strategic behavior.

(a) Accounting options

IFRS 1 First-time Adoption of International Financial Reporting Standards (Appendix C) allows for several options when accounting for business combinations. The exemptions relating to business combinations also apply to acquisitions of investments in associates, interests in joint ventures and interests in a joint operation when the operation constitutes a business. According to IFRS 1 Appendix C, “an entity may keep the original previous GAAP accounting, that is, not restate:

- previous mergers or goodwill written-off from reserves;
- the carrying amounts of assets and liabilities recognized at the date of acquisition or merger; or
- how goodwill was initially determined (do not adjust the purchase price allocation on acquisition).

However, should it wish to do so, an entity can elect to restate all business combinations starting from a date it selects prior to the opening balance sheet date.”

Therefore, the transition effect researchers seek to identify could be quite small and therefore underestimated when only the transition years are studied. According to the ICAEW (2006, p. 91) IFRS
implementation report, all first time adopters used this exemption and, therefore, did not restate all pre-transition date business combinations. The report found only a few companies restated some selected business combinations. Thus, anticipating IFRS 1, we would expect the transition effects for accounting for business combinations might be difficult to observe. However, most academic studies do find a transition effect, which likely understates the effect. A weakness of current research is that none of the studies we reviewed considered the impact on IFRS 1 options for goodwill accounting on the data collected thus there is a lack of evidence about how the options have affected the usefulness of information on transition to IFRS.

(b) Communication strategy

During the transition years many companies provided an in depth analysis of the changes for analysts and investors. Therefore, the accounting effects were well explained. This communication emphasis may disappear over time. In this regard, Martínez and Martínez (2014) looked specifically at the first time transition communications provided by Spanish firms, because they had to provide individual reconciliation adjustment information from local GAAP to IFRS for various balance sheet items including intangibles. Therefore, they could differentiate between the value relevance of the accounting standards per se and the incremental effect due to additional transition disclosures. They found an effect for the decomposed information for adjustments to intangibles that will not be disclosed in future years. As noted above, Baboukardos and Rimmel (2014) found evidence that higher levels of disclosure enabled investors to better interpret the accounting numbers when predicting future performance. Accordingly, we encourage designs that can differentiate between one-time communication effects and overall disclosure effects.

(c) Strategic behavior

When recording transitional write-offs managers may have had incentives to act strategically. For example, they could increase the amount of write-offs treated as an outcome of an accounting policy change and therefore charged to retained earnings. At the same time, the probability and amount of future impairments that would reduce income from continuing operations is decreased (Beatty and Weber, 2006).

3.6.2. Concurrent events

IFRS transition can be affected by concurrent changes in countries’ institutional settings. For example, IFRS adoption was part of a general EU capital market strategy, the EU Financial Services Action plan, which called for improvements to other capital market disclosures as well as the audit and enforcement regimes. Christiansen et al. (2013) reported that “across all countries, mandatory IFRS reporting had little impact on liquidity. … Thus, changes in reporting enforcement or (unobserved) factors associated with these changes
play a critical role for the observed liquidity benefits after mandatory IFRS adoption. In contrast, the change in accounting standards seems to have had little effect on market liquidity.” Therefore, adequate control variables are key for model specifications.

Impairments and goodwill recognition are driven by the underlying transactions related to economic condition and merger and acquisition activities. These economic transactions are likely to be value relevant when they occur. In such cases, the firm is obliged to release price sensitive information in a timely manner. It is very probable that capital markets process relevant information much earlier than assumed by the Ohlson model. Accordingly, the end of year financial report is unlikely to provide new information although it may have a confirmatory role. We suggest that other research designs, for example event studies or the use of lagged variables, would be better to control for time sensitive effects.

As previously noted, 11 out of 13 studies we consider rely on the Ohlson model. As well as capturing more about institutional settings we also recommend to focus on developing the theories that underpin their work. Without repeating all arguments for or against the use of the value relevance approach, we point to the main finding of Holthausen and Watts (2001): “… the value-relevance literature’s reported associations between accounting numbers and common equity valuations have limited implications or inferences for standard setting; they are mere associations. We argue that the underlying theories are not descriptive and hence drawing standard-setting inferences is difficult.” Therefore, we suggest future projects should be designed with these comments in mind.

We identify two studies that did not use the general association approach. Knauer and Wöhrmann (2015) concluded that impairing goodwill might be a special event, which affects share prices or abnormal returns earlier than predicted. Hamberg et al. (2011) provided a different interpretation: they questioned the ability of investors to assess the impact of the change from the goodwill amortization to the impairment-only approach. Future research could fruitfully examine the timing of goodwill impairments and the impact on market value by using different research designs. In addition, these new designs could overcome issues stemming from a potential publication bias or omitted variable problem. We do not know how many studies are not published because they do not find the expected significant relationship that is interpreted as value relevance.
4. Factors associated with recognition of goodwill, other intangible assets and impairment

4.1 Scope of studies

The second set of studies investigates explanatory factors for the recognition of goodwill, other intangible assets and impairment. These studies also use models testing associations of variables. For example, the incidence and amount of impairment is regressed against various explanatory variables, which should proxy for economic factors, firm attributes and managerial incentives. The authors aim to show a causal relationship (or an association) between the recognition of goodwill, other intangible assets and impairment and various incentives managers may have when applying accounting standards. We also examine studies that explore the predictive value of recognized goodwill and other intangible assets and the timeliness of impairment recognition.

The literature seeks to contribute to the standard setting debate by showing how standards are applied and identifying factors that impact on application with implications for future standard setting and enforcement. However, in this set of studies the researchers’ task is more difficult than in value relevance studies, because demonstrating causality in an empirical model (e.g. the amount of impairment recognized is less when managers have a bonus plan linked to accounting profit) is more challenging than demonstrating an association between variables such as the recognized amount of an asset and share price. Ignoring the causality issue, the studies we refer to often have the following research expectations: The incidence and amount of impairment should be associated with economic fundamentals (such as poor firm performance); Impairment recognition is also influenced by managerial incentives (e.g. linked to remuneration) and firm factors (such as a change in chief executive officer (CEO)); and goodwill and other intangible assets should be associated with future earnings or cash flow (i.e. have predictive ability).

4.2 Recognition of goodwill and other intangible assets in merger activity

Despite the interest to standard setters and practitioners, it appears only a few studies have examined recognition of goodwill and other intangible assets in merger and acquisition activity in the IFRS setting (see Boennen and Glaum, 2014). Glaum et al. (2007), Glaum and Vogel (2009) and Glaum and Wyra (2011) provide descriptive evidence about goodwill recognition and the application of IFRS 3 and IAS 36 by leading European companies, which provides useful information about the magnitude of amounts recognized in merger and
acquisition activity. Glaum and Wyra (2011) report that the ratio of goodwill to cost of acquisition is 61.5 per cent for 322 European companies, indicating the importance of the topic of recognition of goodwill.

Considering the academic literature, we identified five studies that specifically examined goodwill and/or other intangibles arising in mergers and acquisitions. Three studies explored how the recognition of goodwill and other assets is related to economic factors (such as market conditions and merger and acquisition activity) and managerial incentives (such as remuneration plans). Two studies look at impact of IFRS 3 by considering future benefits or benefits to users of financial information (analysts) (Table 2, Panel A).

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Detzen and Zülch (2012) illustrate the use of the models commonly employed in studies in this area. The authors regressed the amount of goodwill on variables representing factors likely to be associated with the takeover, including expected benefits from the combination, target firm value (book to market value), industry, payment method (shares), firm size and dummy variables for year and country-legal cluster. In a subsequent variation of this model, the authors added variables representing the amount of the CEO’s cash bonus, the thresholds applying to the bonus, and the value of shares held by management. The models were derived from the US literature where this type of model has been used in many studies (see Boennen and Glaum 2014). Detzen and Zülch (2012) focused on listed companies (IFRS reporting firms) from UK, France and Germany during the period 2005-2008. Data about the takeovers were collected from annual reports. Other financial data was accessed from Datastream. The authors found that the amount of goodwill recorded on acquisition was associated with economic factors relating to the target company and expected synergies of the merger. It was also related to the amount of CEO’s prior cash bonuses. The evidence was stronger for non-finance sector firms and those from France and Germany.

Bugeja and Loyeung (2015) investigated related questions for a sample of Australian firms in the period 1998-2012 (pre/post IFRS study). They explored the amount of the purchase price allocated to goodwill in 308 successful takeovers. The models used are similar to those of Detzen and Zülch. Bugeja and Loyeung (2015)

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6 The use of hand collected data and data from databases is common in the studies reviewed in our paper. This approach is necessary because many variables of interest are not available in databases. The approach has both strengths and weakness. For example, hand collected data is a potentially rich source of information but its collection is subject to human judgement and error. The use of database data potentially reduces author error and provides comparable data but it is subject to the coverage and accuracy of the database. These are well-recognized problems in academic research. However, they are seldom discussed in the papers we review. For example, authors seldom mention how they ensure the accuracy of hand-collected data, nor do they discuss the limitations of databases relating to firm coverage and accuracy of data.
used a probit model with variables to capture economic factors and possible managerial opportunism. Takeover characteristics included in the model related to acquirer firm ownership level, nature of takeover (friendly or not), whether firms were in the same industry and whether a premium was paid. A variable for managerial bonus was included and also interacted with an IFRS adoption variable to explore whether associations of variables were different after adoption of IFRS.

Bugeja and Loyeung (2015) reported that 42 per cent of takeovers did not record goodwill. For firms recognizing goodwill on acquisition, the authors found the amount was generally unrelated to target firm economic characteristics but was related to an accounting based bonus plan of the acquiring firm’s CEO. The amount allocated to goodwill increased after the adoption of IFRS, which they linked to the non-amortization of goodwill under IFRS. Other significant factors were the level of leverage before the takeover, the takeover premium paid, whether the target and bidder were in same industry, the amount of goodwill in the target and the method of payment. In addition, the authors examined the amount of the purchase price allocated to identifiable intangible assets. They concluded that this allocation did not reflect opportunism but was explained by firm characteristics and takeover characteristics.

Russell (2015) investigated the recognition of goodwill by Australian firms, in a similar period (1987-2012). He also included other intangible assets in his analysis. His study considered similar issues to those above (i.e. the amount of goodwill recognized and explanatory factors for recognition) and he also motivated his study as a pre/post IFRS examination. The research question was: Did adoption of IFRS change managerial incentives to recognize intangible assets? Once again, the underlying premise was that recognition would reflect some combination of firm economics and managerial opportunism. For example, on p.1 Russell stated: ‘Management recognizes intangible assets to signal firm economics and to act opportunistically’.

Russell (2015) added to prior studies through the use of two stage models, employing an instrumental variables approach to control for endogeneity arising from both economics and incentives. In the first stage, he set up five models, to arrive at dependent variables measuring: share issues; leverage covenant breach; executive compensation; firm size; future economic benefits (market to book value). The first three models related to managerial incentives and the second two to firm economics. In the second stage, the coefficients of the dependent variables of the five regressions were used as independent variables in OLS models. The dependent variables in the OLS models were intangible assets (goodwill, identifiable intangible assets, R&D assets, and exploration and evaluation assets). Other control variables included IFRS, firm size, performance, volatility, cash flow/debt, analyst following, firm age, takeover bidder, and industry.
After IFRS adoption, Russell (2015) found that the association of goodwill and economic benefits was stronger but the associations of identifiable intangible assets and exploration and evaluation assets with economic benefits were weaker. Thus, he concluded that the economic benefits associated with goodwill were enhanced by IFRS but the information about identifiable intangible assets and exploration and evaluation assets was less useful to financial report users.

A number of US studies consider the predictive value of goodwill by examining the association between the amount of goodwill recognized and future performance (e.g. the amount of future cash flows) (see Boennen and Glaum 2014). Su and Wells (2015) take a similar approach and consider to extent to which the recognition of identifiable intangible assets was associated with future performance. They studied 367 Australian firms in the period 1998-2008 to explore whether the amounts recognized were associated with future performance or change in performance and whether these relationships changed post-IFRS adoption. Their models regressed measures of future performance (EBITDA or operating cash flows in three subsequent years) against amounts of identifiable assets and other control variables, including goodwill. IFRS adoption was included as an interaction term. The authors found that other intangible assets were not associated with future performance while recognized goodwill was associated with future performance. They concluded that their results did not support the inconsistency in practice where acquired intangible assets are recognized but internally generated intangibles are not recognized.

Chalmers et al. (2012) explored the usefulness of recognized goodwill by considering properties of analyst forecasts. They studied 426 Australian listed companies in the period 1993-2007. They reported that analyst forecast error was less and dispersion was lower for firms that recognized more intangible assets. The authors concluded this relationship was largely driven by IFRS goodwill accounting methods (i.e. no goodwill amortization in the post IFRS period). This study is one of few using analyst data. It provides evidence in support of the current standards IFRS3/IAS36 from an important user group. However, the evidence is drawn from only one country so may not be generalizable.

4.3 Discussion - Recognition of goodwill and intangible assets

For IFRS adopting firms, we found only a few academic studies investigating how economic factors and managerial incentives are associated with the recognition of goodwill and other intangible assets. The evidence from the five studies identified suggests that amounts of goodwill and other intangible assets recognized –
1. Are associated with both economic fundamentals and managerial incentives e.g. bonus plans (Detzen and Zülch (2012); Bugeja and Loyeung (2015)).
2. Are associated with future economic benefits only for goodwill (Su and Wells (2015)).
3. Are negatively associated with properties of analyst forecasts (error and dispersion) (Chalmers et al. (2012)).
4. Following IFRS adoption, goodwill was more strongly associated with economic factors but other intangible assets were not (Russell (2015)).

We have evidence only from Australia and three EU countries (UK, France and Germany). Using the criteria identified at the beginning of our paper, the evidence about IFRS reporting on this question is not strong. Although there are some consistent results across the studies, data are based on only a small number of companies given that IFRS are adopted or used by companies from more than 100 countries (Pacter, 2015). In relation to the usefulness of the amount of recognized goodwill, we could find only two studies using Australian data. The results for these studies may be country specific, because of the nature of Australian GAAP prior to IFRS adoption. Thus evidence in this area appears limited and there appears to be several research opportunities in this area. The IASB has several projects of interest that relate to this topic area on which it would appreciate academic evidence. On a positive note, the studies discussed illustrate careful designs, where the researchers have identified practical aspect of merger and acquisition accounting and endeavoured to proxy for them in their models with a range of appropriate control variables. One study (Russell 2015) has attempted to distinguish between various explanatory factors through the use of two stage models, which increases the value of the evidence collected.

4.4 Impairment of goodwill and other intangible assets

Many more studies explore the factors associated with the recognition of impairment of goodwill (Table 2, Panel B). Impairment of other intangible assets is less often investigated. In general, the study designs take the same approach as described above. Models are constructed with either incidence (a dummy variable capturing the occurrence of impairment) or amount of impairment (a numerical value of the magnitude of impairment expense, possibly scaled by total goodwill or total assets) as the dependent variable.

The usual approach in the studies is to consider economic factors that should be associated with recording impairment while at the same time also investigating the effects of managerial incentives. The relevant accounting standard (IAS 36) suggests that economic conditions should be associated with impairment.
However, a large body of academic literature claims that because impairment recognition involves judgement and estimates, we should expect to find evidence of managerial opportunism in impairment recognition.

### 4.4.1 Impairment and economic indicators

Siggelkow and Zülch (2013) examined the factors that influence impairment decisions by German listed firms for goodwill, other intangibles and property, plant and equipment. They pointed to the US findings that earnings management is related to impairment expense recognition. However, the authors argued that the German companies in their sample operated under different accounting standards (IFRS) and in a different institutional setting. Drawing on arguments posited in the US literature and using models developed in that setting, the authors set up a series of random effects probit models where the probability of recording impairment (0/1 dummy variable) was regressed against a number of factors including firm income, cash flow, value (or growth prospects), leverage, size, auditor, cross listing and year. Variables to capture Big Bath accounting and earnings smoothing were also included. The analysis was based on a full sample and a subsample of firms with CEO change and earnings-based bonus plans.

Siggelkow and Zülch (2013) found that the amount of impairment was negatively associated with profitability, as expected in the research predictions of many studies. Avallone and Quagi (2015) presented a similar result for profitability for firms from Germany, Italy and UK during the 2007-2011 period. They found that the amount of goodwill written off is positively associated with the amount of goodwill held and negatively associated with profitability. Jordan and Clark (2015) investigated goodwill impairment by Canadian managers on adoption of IFRS. They found evidence of lower operating performance in the year of impairment and in prior years. Mohd-Saleh and Omar (2014) reported that the incidence and amount of impairment was negatively associated with profitability for Malaysian firms.

AbuGhazaleh et al. (2011) investigated factors associated with recognition of goodwill impairment for UK listed firms in the immediate IFRS adoption period 2005-2006. The statistical models employed were similar to those used by Siggelkow and Zülch (2013). The dependent variable (amount of goodwill impairment/total assets) was regressed against variables capturing attributes linked to economic impairment (book to market value, amount of goodwill, number of cash generating units, change in turnover, change in operating cash flows, profitability and debt ratio). They found some economic impairment proxies were significant as predicted, namely book to market value (positive association) and change in operating cash flows and profitability (negative association).
Overall, five studies drawing data from five countries provide evidence of the expected relationship between impairment recognition and poorer performance. There are some differences in the extent to which individual proxies are significant (e.g. profitability, operating cash flows; market to book ratio) but the general pattern is consistent, with the incidence of impairment reflecting economic conditions. We found only one study did not report the expected relationship (Giner and Pardo, 2014).

4.4.2 Impairment and managerial incentives

In addition to the evidence about impairment and firm performance, Siggelkow and Zülch (2013) found the incidence of impairment was positively associated with unexpectedly high earnings, suggesting income smoothing. Nevertheless, and contrary to expectations based on the US literature, impairment recognition was not associated with Big Bath, CEO change, leverage or compensation. Other studies also failed to find the expected relationships. Iatridis and Senftlechner (2014) found no evidence linking the amount of goodwill impairment with length CEO tenure for Austrian companies in the period 2006-2011. In motivating their study, the authors pointed to a cultural trait (high uncertainty avoidance) and similarities with the German institutional setting that may impact impairment recognition. The authors focused on earnings management linked to CEO change but nevertheless found ‘the change in CEO does not significantly lead to higher impairment’ (p. 172).

Jordan and Clark (2015), studying Canadian companies adopting IFRS, concluded managers did not demonstrate Big Bath behavior, contrary to prior Canadian and US research. Studies reported that Big Bath behavior occurred on transition to an earlier standard in 2002 (Lapointe-Antunes et al., 2008). The authors questioned whether managers would exhibit these opportunistic practices on adoption of IFRS or whether they would use impairment to signal relevant economic information. The authors concluded the latter, and suggested managers’ behavior changed because of a different treatment of impairment expense on transition in 2013. The conclusion suggests that the requirements of the standard at 2013 curtailed previously observed opportunistic behavior, assuming other factors did not change or were not relevant.

Thus, an impact of managerial incentives (measured through variables such as income smoothing, Big Bath behavior, CEO change and management compensation) on impairment recognition was predicted for IFRS adopting firms, based on some of the prior US literature. However, it was not observed in these studies using data from Germany, Austria and Canada. The lack of significant variables may arise because the underlying effect is not present or because the variables do not effectively capture the concept of interest. In

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7 In the 2002 transition, impairment was ‘below the line’ thus not affecting net income. In the 2013 study, impairment was ‘above the line’, that is, it reduced net income.
the IFRS studies a possible explanation is differences in the institutional settings and thus in managerial incentives in the Germany and Austria compared to the US setting. Siggelow and Zulch (2013) pointed to differences in the German setting, such as the importance of bank finance and other features (code law origins, prudence and creditor protection, and stakeholder governance models), which may have contributed to their results. In addition, they recognized the potential for data limitations (related to the data that makes up the proxies, for example, for bonus plans) to affect their findings.

However, others authors have concluded that the evidence points to managerial opportunism. Hamberg et al. (2011) investigated goodwill impairment in the immediate post-IFRS period 2005-2006. They studied Swedish firms and used a probit regression model with variables that were similar to those in the models described above. They found that the length of CEO tenure was negatively associated with the incidence of impairment (albeit at weak significance levels).

Avallone and Quagi (2015) concluded they found evidence of managerial opportunism in the calculation of goodwill impairment for UK, German and Italian firms, which they identified by examining weighted average cost of capital estimates and growth rates used by firms and comparing them to cost of capital and growth rates that the authors’ determined from independent non-firm data. The authors concluded that their evidence highlighted how impairment expense could be manipulated.

Giner and Pardo (2014) studied impairment recognition by Spanish firms and concluded that managers were exercising discretion in the reporting of goodwill impairment and that Big Bath and earnings smoothing influenced their reporting. The models used in the regression analyzes (probit for incidence and tobit for magnitude analyzes) were in line with those described above. Contrary to the other studies discussed in this section, economic indicators such as profitability, market returns and book value were not significant (overall or in either of two periods 2005-2007 or 2008-2011). Market to book value was significant in the 2005-2007 period, but not the 2008-2011 period. The Big Bath and earnings smoothing variables were not significant in the 2005-2007 period but were significant in the 2008-2011 period.

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8 In a 2014 working paper, Glaum, Landsman and Wyra (2015) reported an association between managers’ compensation and impairment recognition only for the US IFRS firms, not for the other IFRS firms in their international sample providing evidence of the impact of differences in the institutional environments where IFRS and US GAAP are used.

9 The Glaum et al. (2015) working paper included firms from 21 countries. They reported that CEOs were less likely to write down acquisitions for which they were responsible.

10 They noted that estimates of cash flows were another potential manipulation tool but they did not have data available to investigate this.
Caruso et al. (2016) argued that the practices of managers changed after adoption of IFRS. Based on 17 firms with merger and acquisition activity in the period 2006-2010, the authors reported some managers chose a goodwill amortization rate in line with past Italian practice (10-20%) while others did not write off any goodwill at all. Based on their review of financial statements and patterns in reported income and impairment expenses (rather than from a statistical modelling approach), the authors claimed there was evidence of earnings smoothing, income maximization and Big Bath in the four years post merger.

In summary, the evidence about how managerial incentives impact on impairment recognition is not strong. There is some evidence in Sweden in the immediate post adoption (Hamburg et al. 2011) period and in the Spain post financial crisis period (Giner and Pardo, 2014). Other studies provide more general descriptive evidence (Caruso et al. 2016, for Italy). Avallone and Quagli (2015) extended the literature by considering inputs into impairment models. They used estimations to proxy for internal firm data, which is an interesting approach but we do not know how close the estimates are to actual data.

The use of CEO change or CEO tenure as a proxy for earnings management is problematical because these variables capture a number of related factors. As noted by Glaum et al. (2015) CEO change may occur because of poor economic performance of the previous manager. Thus, impairment decisions of a new CEO may reflect underlying economics where the loss in value of assets leads to a new CEO, not the reverse. Without more thorough testing, a significant CEO change variable cannot be assumed to represent earnings management.

Another issue in all the studies is the causal relationship of impairment recognition and managerial incentives. While some authors are careful to state they do not to claim to show a causal relationship, there is an implicit assumption in many studies that evidence of an association of variables points to a causal relationship. Statistical techniques that can demonstrate a causal relationship are not used in the studies we review. Such techniques offer potential to expand the usefulness of studies in this area.

11 Wersborg et al. (2014) reached a different conclusion because they consider both US GAAP and IFRS research. They assembled the evidence from practitioners and others presented to the IASB in the PIR for IFRS 3 and examined the extent to which the academic evidence supported the views of practitioners. In some cases, for example goodwill impairment, the concerns of the practitioners were not backed up by the academic evidence. There are several possible explanations for this result. First, the parties providing feedback may be the most critical and their views may not be representative. Second, as already noted in our paper, failure to find an effect in an academic study (i.e. a statistical association of variables) does not mean that the underlying concept is not present.
Thus, there are many opportunities for further investigation on the topic of managerial incentives and impairment. Studies that can identify the particular institutional features of their setting (and use effective proxies for these features) and make prediction of the relationship of their features and the expected accounting outcome will be particularly interesting. There are several working papers available (see Appendix Panel B) and it is to be expected that their evidence will provide additional insights into the relationship of impairment recognition and managerial incentives.

4.4.3 Firm ownership and corporate governance

AbuGhazaleh et al. (2011) included proxies to capture Big Bath and earnings smoothing, along with variables for change in CEO, corporate governance structure, firm-blockholder ownership and executive ownership. Variables for earnings management (Big Bath, earnings smoothing and CEO change) were also significant in the predicted direction, so the authors concluded that goodwill impairment reflected managerial discretion. However they also included variables to capture corporate governance mechanisms12 to replicate the interaction of various factors on accounting output. The authors concluded stronger corporate governance mitigates managerial opportunism and that the goodwill impairments examined in their study were more likely to be in response to changes in economic circumstances and real declines in value of the firm.

Several studies of Malaysian firms have investigated managerial behavior during the adoption of the standard equivalent to IAS 36 with a particular focus on firm ownership and governance. Abuaddous et al. (2014) reported that around 25 per cent of Malaysian companies fully wrote off goodwill prior to adopting the new standard. The authors also found that after adoption, new CEOs were more likely to delay recognizing impairment until their second year. Another four studies have explored the impact of firm ownership and corporate governance on impairment recognition. The models used are generally consistent with those used in prior studies. Mohd-Saleh and Omar (2014) studied 948 listed firms in the period 2006-2010. They found the incidence and amount of impairment was associated positively with firm size and negatively with profitability. They reported that family controlled firms were more likely to record goodwill impairment and to book higher amounts than non-family controlled firms. Presence of CEO duality (the CEO was also Board chair) was related to goodwill impairment only for family controlled firms.

Majid (2015) observed that the effect of Big Bath accounting on impairment was moderated by the presence of more outside shareholders for Malaysian listed firms in the period 2006-2010. This result is in the

12 They carried out a factor analysis based on data measuring board independence, board activity, block ownership, executive ownership and non-executive ownership.
same vein as AbuGhazaleh et al.’s (2011) conclusions regarding impairment and stronger firm governance for UK firms. However, contrary evidence has also been presented. Omar et al. (2015) studied 579 firm-years for Malaysian listed firms in the period 2003-2009. They did not find independence of the board or audit committee to be related to incidence and amount of goodwill impairment. This finding may reflect no relationship or it may reflect the difficulty of capturing firm governance with proxies such as board independence. Similar to Mohd-Saleh and Omar (2014), Omar et al. (2015) reported that family controlled firms were more likely to record goodwill impairment than non-family controlled firms. They also found that a new CEO was more likely to record impairment. These Malaysian studies are building on the prior literature by using similar models and adding variables of particular interest in their setting, such as family ownership and firm governance. The effects of CEO change are mixed, as in studies based in other countries, indicating the importance of including a number of control variables to attempt to capture all relevant factors that may influence managerial behavior. Investigating the impact of ownership structure adds to the literature, although the findings may be country specific. Future research will be able to investigate this effect in other countries.

4.4 Timeliness of impairment

Amiraslani et al. (2012) investigated timeliness of impairment in a sample of 4,474 firms from EU countries (and Switzerland and Norway) in 2006-2011. Using the Basu (1997) model of conditional conservatism, the authors found that impairment expense was negatively associated with market returns. The relationship was stronger for goodwill than other assets (tangible or other intangible) and in countries characterised by stronger enforcement and investor protection. A working paper by Glaum et al. (2015) (based on IFRS reporting firms from 21 countries during 2005-2011) explored the association between impairment and current year performance, arguing that if impairment recognition is timely, then it will be associated with current period rather than prior period returns. They found this expected associated in the period 2005-2007. However, in the subsequent period 2008-2011, impairment was associated with both current and prior period returns, indicating some lag in the recognition of impairment during the financial crisis. They reported that the association between impairment and economic performance was more timely in countries classified as having strong enforcement of accounting standards.

Bond et al. (2016) investigated impairment of goodwill, identifiable intangible assets, and property plant and equipment using market indicators of impairment (the relationship of book value of equity and market

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13 Measures of investor protection and enforcement were taken from Leuz (2010).
14 Enforcement was measured based on the indices of Brown, Preiato and Tarca (2014).
value of equity) for 5,842 Australian firms in the period 2000-2012. Considering whether impairment recognition was consistent with these indicators, the authors concluded that in most cases amounts recognized were not material or were not of a magnitude consistent with impairment indicators. In addition, impairments did not appear to be timely. The authors also recognized that key information needed to assess impairment (at the CGU level) is not available to researchers. The paper adds to the available evidence by investigating the apparent discretionary nature of impairment and raising many questions for standard setters and regulators.

4.5 Discussion – impairment of goodwill and other intangible assets

In summary, studies of recognition of impairment expense have reported the following:

1. The amount of goodwill impairment was associated with economic factors (such as low profitability) in many countries including Germany, Italy, UK, Canada and Malaysia (Siggelow and Zülch (2013); Avallone and Quagi (2015); Jordan and Clark (2015); Mohd-Saleh and Omar (2014)).

2. The amount of goodwill impairment was associated with:
   a. Firm corporate governance (AbuGhazaleh et al. (2012)).
   b. CEO change (AbuGhazaleh et al. (2011); Abuaddous et al. (2014) and length of CEO tenure (Hamberg et al. (2011)).
   c. Earnings management (AbuGhazaleh et al. (2011); Siggelow and Zülch (2013); Giner and Pardo (2014); Avallone and Quagli (2015); Caruso et al. (2016)).
   d. Firm ownership (Omar et al. (2015); Mohd-Saleh and Omar (2014); Majid (2015))

Thus, many studies provide evidence that the incidence and/or amount of impairment were associated with economic factors (such as lower profitability). This is consistent with the research predictions generally made by scholars. Reviewing the studies that investigated managerial incentives, the authors were more likely to conclude they did not find evidence of Big Bath, CEO change and CEO compensation being associated with impairment than the opposite. Thus, the evidence about managerial incentives for IFRS firms is not as strong as in the US setting, although the US research is often used to motivate the IFRS studies. In some cases, authors propose single hypotheses and endeavor to account for other factors using control variables in their models. However, authors are often testing joint hypotheses (e.g. the impact of economic factors and managerial incentives) because the various incentives operate at the same time. In many studies, it is difficult to ascribe the results to one or the other argument and it is difficult to determine the relative importance of each explanation, assuming both are influential.
Many studies in this section use similar models and similar sets of control variables (with similar definitions) which enables comparison of results. A small number of modelling techniques (BLR, Tobit and OLS) are commonly used. In some jurisdictions there are a number of studies using the same companies and years (e.g. in Malaysia and in Australia), which helps when researchers try to interpret and reconcile findings.

Following the design and techniques used in prior studies can be useful if it helps researchers to build on prior findings through a consistent approach or to demonstrate the robustness of prior findings. However, dedication to following prior studies can be at the cost of innovating or taking new approaches to address the research questions. Thus, opportunities to substantially expand the research evidence may be missed.

5. Compliance with IFRS 3 and IAS 36 disclosure requirements

5.1. Scope of studies

In the third group of studies, we examine research about compliance with the disclosure requirements of IFRS 3 and IAS 36. The requirements aim to elicit firm specific information to assist investors and others to better understand the events of the period and the various choices firms have made in their operations and applications of accounting standards concerning goodwill and impairment. The European Securities and Markets Authority (ESMA) provided a 2011 financial statement review of impairment testing of goodwill and other intangible assets, which evaluated the appropriateness of disclosures for a sample of 235 European listed companies from 23 countries. ESMA (2013, 3) concluded that while major disclosures relating to goodwill impairment were generally included, in many cases they were boilerplate in nature and not entity specific. In ESMA’s view, this resulted from a failure to comply and a lack of specificity in the standards.

A number of studies have examined compliance, usually based on hand collected data that measures disclosure in financial statement footnotes against the requirements of the relevant standard/s. Firms are then compared based on their disclosure scores. Researchers seek to identify factors that explain the level, change and dispersion in scores between firms and countries. In general, the research expectation is: Compliance with disclosure requirements (of IFRS 3 and IAS 36) improves over time but may vary between firms reflecting managerial incentives, firm factors (such as ownership and governance) and country influences. The following studies all found evidence of less than full compliance with mandatory disclosure requirements. Table 3 describes the sample, design and main findings of the studies we review.
5.2. Studies of compliance with IFRS 3 and IAS 36 disclosure requirements

5.2.1 Cross country studies

The most substantial cross-country compliance study was Glaum et al. (2013). They applied a 100-item checklist based on IFRS 3 and IAS 36 disclosure items to the 2005 annual reports of 357 companies in 17 European countries. Overall, they found evidence of substantial non-compliance. Using OLS techniques, they examined a number of company- and country-level variables that may explain the variance in compliance levels. Company-level variables associated with compliance included the firm’s goodwill position, prior experience with IFRS, type of auditor, the existence of an audit committee, the issuance of equity shares or bonds, ownership structure and (financial) industry type. At the country level, significant variables included the strength of the enforcement system and the size of the national stock market. The authors concluded that the country-level variables moderate and mediate some company-level factors. In particular, they found the strength of country-level enforcement substituted for company-level supervision of the accounting function, whereas the importance of the stock market mediated the impact of audit committees. Because the study included only 2005 data, the authors tested the robustness of their findings by examining a subset of companies in 2007. They concluded the findings for 2007 were “remarkably similar” to those for 2005 (Glaum et al. 2013, 180), which is somewhat surprising as we could expect a learning effect as practitioners became more experienced with IFRS.

The second cross-country study, Hartwig (2015), investigated compliance with IAS 36, focusing on 17 disclosure items covering goodwill allocation methods and assumptions. He included 472 Dutch and Swedish companies for the financial years 2005 and 2008. Similar to Glaum et al. (2013) he found a high level of non-compliance. In addition, Hartwig (2015) reported a significant increase in disclosure levels over time, which he interpreted as indicating learning. He also argued that higher disclosure levels in Sweden were linked to a more active enforcement system compared to the Netherlands. In contrast to Glaum et al. (2015), he found financial companies were less compliant than non-financial companies. However, the two studies were based on different samples of companies and different checklists so the results cannot be directly compared. Nevertheless, the variation in the results concerning learning effects and the influence of external auditors and financial industry type suggest further research is warranted.
5.2.2 Single-country studies on IFRS 3 and IAS 36 compliance

We found a number of studies investigating disclosure compliance with individual countries. The first set of studies analyzes all types of IFRS 3 and IAS 36 disclosures and the second set concentrates on selected goodwill impairment information required by IAS 36. The studies also varied in the financial years considered, methods applied, and company-level variables investigated, as explained below.

Baboukardos and Rimmel (2014) analyzed annual reports for the 2008 financial year for 76 Greek listed firms, applying two versions of a 58 item checklist based on IAS 36 and IFRS 3 disclosure requirements. They reported high levels of compliance with IFRS 3 requirements (mean 0.82, median 1) but lower levels of compliance with IAS 36 (mean 0.29). Thirty companies did not comply at all with IAS 36 requirements, indicating substantial non-compliance. They also found that recorded goodwill was value relevant only for companies with relatively high levels of compliance.

Devalle et al. (2016) examined IAS 36, 38 and IFRS 3 disclosures for 189 Italian listed companies for the 2010 financial year. Using four different calculations of disclosure scores, they found in general a lack of compliance with mandatory disclosure requirements. Contrary to expectations based on prior literature, they did not find that compliance levels were associated with finance expenses, the presence of an impairment loss, industry sector (financial) or type of audit firm. They concluded that results of compliance studies are influenced by the methodology used, particularly the method of calculating compliance scores. In their study, the only significant explanatory variable for compliance was the magnitude of interest cost to revenue (financial costs to sales). The concluded this result reflected the important role of the banking system in Italy.

5.2.3 Single-country studies on IAS 36 compliance

The following studies focused on IAS 36 disclosure. Carlin and Finch (2010) investigated 50 Australian companies during the first two years of application of AASB 136 (IAS 36 equivalent) (2006-2007). Analyzing seven disclosure items relating to goodwill impairment, they found high levels of non-compliance, “suggesting that a viable organisational option in the face of change is to fail to take steps to comply” (Carlin and Finch 2010, 260). The authors recognized that a lack of resources or experience could contribute to non-compliance in the first year, but considered these explanations were less compelling for subsequent years.

Guthrie and Pang (2013) extended Carlin and Finch (2010) by considering additional financial years. They analyzed seven disclosure items for 287 Australian companies in the period 2005 to 2010. They found that compliance with goodwill allocation disclosures generally improved over time. However, there was some
non-compliance in all reporting periods and firms showed a tendency to define the same or smaller numbers of cash-generating units than reporting segments.

Bepari et al. (2014) examined the impact of the financial crises on Australian firms’ compliance with AASB 136 (IAS 36) disclosures about goodwill impairment testing. They applied an 11-item checklist for 211 to 246 listed firms in their 2006 to 2009 annual reports. The authors concluded that compliance has increased over time, particularly during the financial crises period 2008-2009. Firms showed more compliance when they belonged to a goodwill intensive industry, had a Big 4 auditor, and were more profitable. Compliance was not associated with firms leverage or size.

Considering whether impairment disclosures were affected by the financial crisis, Camodeca et al. (2013) studied 85 large listed companies in the UK. They analyzed seven IAS 36 disclosure items in the companies’ 2007 to 2011 annual reports. They reported a lack of disclosure about the key assumptions of the impairment estimation models, as required by IAS 36. In contrast to the Australian studies, compliance did not increase over time and was seen to decrease during the financial crisis period.

Compliance with FRS 136 (IAS 36) by Malaysian firms was investigated by Carlin and Finch (2009). They studied 50 Malaysian firms in the 2006 financial year, applying a four-stage taxonomy for discount rate and growth rate disclosure in order to assess the firms’ compliance levels. They reported mixed evidence regarding compliance and concluded that many firms produced financial information that failed to meet the FRS 136 disclosure requirements.

Another study reporting non-compliance with IAS 36 was completed in Turkey. Gurarda (2015) reviewed disclosure by Turkish listed companies during 2008 to 2012 (21 to 27 companies per financial year). He reported insufficient disclosure about goodwill testing and impairment including discount rates, growth rates, and the periods over which management projected cash flows. Due to the small sample size, the author did not conduct further tests.

5.3. Discussion – compliance with disclosure requirements

In summary, studies of compliance with IFRS 3 and IAS 36 disclosure requirements point to less than full compliance with mandatory disclosure requirements. This conclusion was reached by several authors from a number of countries, considering a range of companies and years. However, many studies remain at the descriptive stage. Motivations for non-compliance and effects of non-compliance are still to be more fully
explored in many countries. Practitioner learning (in relation to new standards) may be presented as a reason for increased company compliance over time, however, it is difficult to disentangle the impact of learning from a number of factors that may affect compliance levels including increased activity by external auditors and accounting enforcement bodies.

Glaum et al. (2013, 167) concluded low compliance levels could be interpreted as unintentional failures and misinterpretations of the disclosure principles or intentional practice. Carlin and Finch (2009, 94) argued that low compliance levels could be partly explained by a misinterpretation of the materiality rule. Gurarda (2015) claimed non-disclosure meant goodwill impairment was ‘hidden’ to protect stock prices, although he did not investigate this issue specifically. A useful attempt at prioritizing disclosures was undertaken by Johansen and Plenaborg (2013). They surveyed financial statement preparers and investors and found, inter alia, that notes regarding business combinations (IFRS 3) and impairment tests (IAS 36) were highly demanded but were also the most costly items to prepare. Therefore, they concluded that non-compliance could reflect resource allocation decisions.

Beside firm-level factors, country-level factors are likely to play a role in compliance. Glaum et al. (2013) and Hartwig (2015) suggested that the strength of the enforcement system is important. New approaches to capture effects of differences in accounting enforcement within and between countries are needed. For example, legal institutions, legal protections and the role of the independent enforcement bodies and the media may vary between countries. In addition, external auditors and corporate governance also potentially affect compliance and these could vary between both firms and countries. These factors are generally not well explored in the current literature. In relation to external auditors, a binary variable (Big-4-auditor) has been used. However, many other firm aspects may be captured in this variable so more investigation is needed.

Some studies have investigated the effects of industry membership on compliance but we need better predictions of reasons for industry differences. Studies report inconsistent results for firms from the financial sector. Thus, it remains unclear whether financial firms have significantly different disclosure behaviors compared to other firms and why this may be so. Industry type could be correlated with other firm-level factors, so any industry related results should be analyzed more deeply.

Some studies include multiple firm years and are therefore able to consider if learning that takes place as new standards are adopted and implemented. Present results regarding learning are unclear. The issue is made complicated because disclosure is ‘sticky’. If an item is disclosed in one year, the probability that it will be
disclosed in the future is higher than that for an item not previously disclosed. However, studies do not consistently report increasing compliance levels over time and some (but not all) suggest disclosure is affected by economic events such as the financial crisis in 2008 (Bepari et al. (2014); Camodeca et al. (2013)). With longer time series of data, researchers should be able to provide more insights on the growth in compliance. However, more theoretical development about the drivers for compliance, how they interact and the impact of non-compliance would be useful.

6. Conclusions

We provide a review of academic literature about goodwill accounting for firms using IFRS. Accounting for goodwill has been a contentious topic for practitioners and has generated considerable interest for researchers (IASB, 2015; Wersborg et al., 2014). There is a well-established literature based on US GAAP and US listed firms (Wen and Moehrle 2015; Boennan and Glaum, 2014). Studies of IFRS adopting firms have expanded this literature by considering similar research questions and using the same (or similar) research designs to provide evidence for a potentially different set of firms. This evidence adds to the literature but there are some specific matters that should be recognized by researchers as they expand this area of research.

The first matter to recognize is that the evidence derived from the US setting is not necessarily transferable into the IFRS world. A striking difference between studies with US data and IFRS studies is that for the former usually provides a one-country setting with a largely homogeneous regulatory setting at any one particular time which is not the case for the cross-country studies. A one-country setting permits researchers to concentrate on differences between firms as explanatory factors for financial reporting while holding country (and whatever is represented by ‘country’) constant. In contrast, researchers considering a number of IFRS adopting countries are challenged to first understand the variations in institutional settings among the countries in their study and then to identify suitable ways to accommodate these differences in their research designs and models. Future research will be enhanced as researchers develop a deeper understanding of country frameworks and differences in them as well as changes in countries’ institutional frameworks over time.

In addition, it is not sound practice for researchers to assume that the theory they use (which has been developed and tested in the US setting) applies equally in IFRS countries. One example is executive compensation, which reflects national cultures and norms. Researchers need to explore, as part of their study motivation and design, the extent to which they expect the incentives to operate in the same way for in the
countries they study. Future work that builds theories about incentives in other international settings would be particularly useful.

Prior work has alerted researchers to differences between countries in accounting traditions and practices (Nobes, 1983) and about the impact of culture on accounting (Gray, 1986). These themes remain important in cross-country studies, despite the use of common (i.e. the same or very similar) accounting standards. For example, some studies in our review investigate the impact of firm ownership concentration in Malaysia. They provide insights into the specific setting of that country, which reflects a particular combination of culture and social norms. There is scope for future work to further explore how culture and social norms affect the application of IFRS, which will be of interest to standard setters, regulators and practitioners.

The second important contribution of the literature we review is that it adds to our understanding of the impact of adoption of IFRS, which has been an extensive and fundamental change in financial reporting. The change has both costs and benefits and is worthy of investigation. On many aspects of IFRS adoption, present evidence is inconclusive thus there is need for more research to inform policy debates and the decisions of regulators and standard setters in the future. As well as areas highlighted in our paper, the websites of the IASB and other national standard setters point researchers to topics of interest. In additional to considering overall effects of IFRS, exploring the impact of particular and controversial standards is worthwhile.

The studies of goodwill accounting provide a significant step towards providing evidence relevant for the decision making process of standard setters and regulators. Our paper shows there were a substantial number of published studies in the period 2005-2016 with many more in the research pipeline (see Appendix). There are some limitations with the existing body of work, and we have discussed some of them in this paper. For example, studies are clustered around particular topics, which is useful for building a body of evidence but it also means that other questions remain unaddressed. We recognize that researchers are limited by data availability. However, this is also an opportunity for researchers to look for new data sources and ways of conducting research to answer the questions of interest. In setting up future studies, researchers are encouraged to look more broadly at the questions of interest for standards setters (see for example the IFRS 3 post implementation review materials; IASB, 2014; 2015) and to investigate questions that have not been considered to date.

Another feature of the current work is the trend to take a previously used study design and apply it in a new setting, such as another country. This practice can be useful for extending the evidence on a topic, but it
calls on researchers to acknowledge the specific features of the setting where their investigation takes place and to adjust their study design (specifically the models they use) to attempt capture the specific features of the new setting. Academic work will be more useful to practitioners when academics can explain where their evidence supports the prior findings and where it is different. It is important that the reasons for differences in findings are explained in terms accessible to practitioners who seek to use the evidence.
References


*Avallone, A., & Quagli, A. (2015). Insight into the variables used to manage the goodwill impairment test under IAS 36. *Advances in Accounting, incorporating Advances in International Accounting 31*(1), 107-114.


*Bond, D., Govinder, B. & Wells, P. (2016). An evaluation of asset impairment decisions by Australian firms and whether this was impacted by AASB 136. Forthcoming.


Accounting and Auditing, 11, 175-184.


*Majid, J.A. (2015). Reporting incentives, ownership concentration by the largest outside shareholder, and


* Those studies are included in our review.
<table>
<thead>
<tr>
<th>Country/model</th>
<th>2005 transition models</th>
<th>Pre-/post-IFRS models</th>
<th>Post-IFRS models</th>
<th>Other models</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Chalmers et al. (2008), Ohlson/Barth-model (GW + GIMP): VR+ for goodwill items</td>
<td>Ji and Lu (2014), 2001-2009, Ohlson model (GW + GIMP): GW + GIMP is VR, VR- after IFRS adoption, VR+ for more reliable information</td>
<td>Baboukardos and Rimmel (2014), 2008, Ohlson/Barth-model (GW), VR for GW only, if compliance with GW disclosure is high</td>
<td></td>
</tr>
<tr>
<td>Greece</td>
<td></td>
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<td></td>
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<tr>
<td>Portugal</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Spain</td>
<td>Martínez and Martínez (2014) Ohlson-model (GIMP); IFRS overall not VR, VR+ for GIMP and more pronounced for low leveraged firms</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UK</td>
<td>AbuGhazaleh et al. (2012), Ohlson/Lapointe-Antunes model (GIMP); VR+ for GIP</td>
<td>Amel-Zadeh et al. (2013), 1997-2011, Ohlson/Barth-model (GW + GIMP): VR for GW in general, VR- for GIMP after IFRS adoption, no VR for loss firms</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

GW = Goodwill; GIMP = Goodwill impairment; VR = Value relevance; VR+ = Value relevance increases; VR- = Value relevance decreases
<table>
<thead>
<tr>
<th>Study</th>
<th>Focus of study</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Panel A</strong></td>
<td>Recording goodwill</td>
<td></td>
</tr>
<tr>
<td>Detzen and Zülch (2012) 2005-2008 UK, France, Germany.</td>
<td>Recognition of goodwill and CEO compensation (short term cash bonus)</td>
<td>The amount of goodwill recognized in an acquisition is positively associated with economic factors (related to the target company and synergies from the merger). It is also associated with prior amounts of CEOs’ cash bonuses although the relationship is not linear. The evidence is stronger for non-finance sector firms and those from France and Germany.</td>
</tr>
<tr>
<td>Bugeja and Loyeung (2015) 1998-2012 Australia</td>
<td>Recognition of goodwill and other intangible assets.</td>
<td>The amount of goodwill recognized increased after IFRS adoption. It was positively associated with CEO bonuses in pre- and post-IFRS years. The amount of goodwill was also associated with attributes of the takeover, such as friendly or hostile acquisition, being a synergistic acquisition, and bidding firm toehold.</td>
</tr>
<tr>
<td>Russell (2015) 1987-2012 Australia</td>
<td>Recognition of goodwill and other intangible assets</td>
<td>After IFRS adoption, the association of goodwill and economic benefits was stronger but the associations of identifiable intangible assets and exploration and evaluation assets with economic benefits were weaker. Recognition of intangible assets was more likely under IFRS (than prior GAAP) and was associated with share issues and executive bonuses.</td>
</tr>
<tr>
<td>Su and Wells (2015) Australia</td>
<td>Recognition of other intangible assets; future performance</td>
<td>The recognition of identifiable intangible assets was not associated with future performance either before or after IFRS adoption. The evidence does not support the current distinction between internally generated intangible assets and those acquired in a business combination.</td>
</tr>
<tr>
<td>Chalmers et al. (2012) 1993-2007 Australia</td>
<td>Recognition of goodwill and other intangible assets; analyst forecast accuracy and dispersion</td>
<td>The association between analyst forecast accuracy and dispersion and intangible assets was stronger following the adoption of IFRS. This result was mainly attributable to goodwill suggesting a loss of information about identifiable intangible assets.</td>
</tr>
<tr>
<td><strong>Panel B</strong></td>
<td>Recording impairment</td>
<td></td>
</tr>
<tr>
<td>Siggelkow and Zülch (2013) 2004-2010 Germany</td>
<td>Impairment, Big Bath, earnings smoothing, CEO change and bonus plan.</td>
<td>The amount of impairment was negatively associated with profitability. It was also positively associated with unexpectedly high earnings suggesting income smoothing. Impairment was not associated with Big Bath, CEO change, leverage or compensation.</td>
</tr>
<tr>
<td>Avallone and Quagli (2015) 2007-2011 Germany, Italy and UK</td>
<td>Goodwill impairment and opportunism (growth rates).</td>
<td>The amount of goodwill impairment is positively associated with the amount of goodwill and negatively associated with profitability. There is evidence of managerial opportunism in choice of growth rates.</td>
</tr>
<tr>
<td>Iatriris and Senftlechner (2014) 2006-2011 Austria</td>
<td>Goodwill impairment and CEO tenure.</td>
<td>A change in CEO was not associated with more goodwill impairment. On average new and seasoned CEOs did not differ in their impairment recognition behavior.</td>
</tr>
<tr>
<td>Jordan and Clark (2015) 2013 Canada</td>
<td>Goodwill impairment and Big Bath.</td>
<td>Firms writing down goodwill had lower operating performance in the year of impairment and in prior years. The evidence did not point to Big Bath accounting.</td>
</tr>
</tbody>
</table>
Table 2: Recognition of goodwill, other intangible assets and impairment continued

<table>
<thead>
<tr>
<th>Study</th>
<th>Focus of study</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bond et al. (2016) 2000-2012 Australia</td>
<td>Impairment of goodwill, identifiable intangible assets, and property plant and equipment and explanatory factors.</td>
<td>Impairment increased significantly following adoption of IFRS. However, a majority of firms did not recognize impairment. In most cases amounts recognized were not material or were not of a magnitude consistent with impairment indicators.</td>
</tr>
<tr>
<td>Giner and Pardo (2014) 2000-2011 Spain</td>
<td>Goodwill impairment, Big Bath and smoothing.</td>
<td>The incidence and magnitude of impairment was not associated with profitability or returns. Larger firms were more likely to record impairment. Impairment was more likely in the financial crises period (2008-2009) and there was evidence of Big Bath and smoothing in this period.</td>
</tr>
<tr>
<td>Caruso et al. (2016) 2006-2010 Italy</td>
<td>Goodwill impairment, Big Bath, smoothing and income maximization.</td>
<td>Some managers chose a goodwill amortization rate in line with past Italian practice (0-20%) while others did not write off any goodwill. There was evidence of income smoothing, income maximization and Big Bath in the four years post merger.</td>
</tr>
<tr>
<td>Abuaddous et al. (2014) 2011-2012 Malaysia</td>
<td>Goodwill impairment, Big Bath and CEO tenure.</td>
<td>Around 25 per cent of companies fully wrote off goodwill prior to adopting the IAS 36 equivalent standard. After adoption, new CEOs were more likely to delay recognizing impairment until their second year.</td>
</tr>
<tr>
<td>Mohd-Saleh and Omar (2014) 2006-2008 Malaysia</td>
<td>Goodwill impairment, firm ownership and CEO duality.</td>
<td>Firm size and measures of profitability (ROA, change in ROA) were associated with the incidence and amount of impairment. Family controlled firms were more likely to record goodwill impairment than non-family controlled firms. Presence of CEO duality (CEO executive chairman) was related to goodwill impairment only in family controlled firms.</td>
</tr>
<tr>
<td>Majid (2015) 2006-2010 Malaysia</td>
<td>Goodwill impairment, Big Bath, CEO change, bonus plan and firm ownership.</td>
<td>Impairment was associated with Big Bath but the effect was moderated by the presence of higher proportions of outside shareholders. Tests of CEO change and bonus plan did not produce significant results.</td>
</tr>
<tr>
<td>Omar et al. (2015) 2003-2009 Malaysia</td>
<td>Goodwill impairment, firm ownership, board and audit committee independence.</td>
<td>Family controlled firms were more likely to record goodwill impairment than non-family controlled firms. Impairment was more likely for a new CEO or one with longer tenure. Independence of the board or audit committee was not related to incidence and amount of goodwill impairment. Presence of CEO duality (CEO executive chairman) was related to goodwill impairment.</td>
</tr>
</tbody>
</table>

**Panel C**

<table>
<thead>
<tr>
<th>Study</th>
<th>Focus of study</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amiraslani et al. (2013) 2006-2011 EU, Norway, Switzerland</td>
<td>Evidence of income smoothing</td>
<td>Impairment recognition is more timely in countries with strong enforcement</td>
</tr>
</tbody>
</table>
Table 3: Firms’ compliance with IFRS 3 and IAS 36 disclosure requirements

<table>
<thead>
<tr>
<th>Study</th>
<th>Country</th>
<th>Sample</th>
<th>Disclosure index</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Multi-country studies</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glaum et al. (2013)</td>
<td>17 European countries</td>
<td>357 companies’ 2005 (partly 2007) annual reports</td>
<td>100 items checklist on IFRS 3 and IAS 36 disclosure, index equally weighted</td>
<td>Overall, substantial non-compliance; substitution effect for strength of country-level enforcement and company-level supervision of accounting function, complimentary effects by importance of stock market compliance and impact of audit committees</td>
</tr>
<tr>
<td>Hartwig (2015)</td>
<td>The Netherlands, Sweden</td>
<td>472 companies’ 2005 and 2008 annual reports</td>
<td>17 items checklist on IAS 36.134 disclosure, index equally weighted</td>
<td>Overall, substantial non-compliance, Swedish companies more compliant than Dutch companies, compliance level increased over time, financial companies less compliant</td>
</tr>
<tr>
<td><strong>Single-country studies, IAS 36 and IFRS 3 disclosure items</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baboukardos and Rimmel (2014)</td>
<td>Greece</td>
<td>76 companies’ 2008 annual reports</td>
<td>58 items checklist on IAS 36 and IFRS 3, two different indexes (weighted and unweighted)</td>
<td>Overall, substantial non-compliance. Only when the company exhibits a high level of compliance is goodwill value relevant</td>
</tr>
<tr>
<td>Deville et al. (2016)</td>
<td>Italy</td>
<td>189 companies’ 2010 annual reports</td>
<td>141 items checklist on IAS 36, 38 and IFRS 3, four different indexes (weighted and unweighted)</td>
<td>Overall, substantial non-compliance, interest cost/sales revenue only significant variable associated with compliance level, other results are not robust to type of index</td>
</tr>
<tr>
<td><strong>Single-country studies, IAS 36 disclosure only</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carlin and Finch (2010)</td>
<td>Australia</td>
<td>50 companies’ 2006-2007 annual reports</td>
<td>7 different AASB 136 disclosure items are analyzed separately, no overall index</td>
<td>Overall, substantial non-compliance</td>
</tr>
<tr>
<td>Guthrie and Pang (2013)</td>
<td>Australia</td>
<td>287 companies’ 2005-2010 annual reports</td>
<td>7 different AASB 136 disclosure items are analyzed separately, no overall index</td>
<td>Overall, substantial non-compliance, average compliance improved over time, tendency to define the same or smaller numbers of cash-generating units than reporting segments</td>
</tr>
<tr>
<td>Bepari et al. (2014)</td>
<td>Australia</td>
<td>211-246 companies’ 2006-2009 annual reports</td>
<td>11 items checklist on IAS 36/AASB 136, index equally weighted</td>
<td>Overall, substantial non-compliance, compliance increased significantly during the financial crises, significant firm-level factors are profitability, industry type, level of goodwill intensity, and Big-4 auditor</td>
</tr>
<tr>
<td>Carlin and Finch (2009)</td>
<td>Malaysia</td>
<td>36 companies’ 2006 annual reports</td>
<td>FRS 136 disclosure items, multi-classification taxonomy (4 stages) for discount rate and growth rate disclosure</td>
<td>Overall, substantial non-compliance</td>
</tr>
<tr>
<td>Gurarda (2015)</td>
<td>Turkey</td>
<td>21-27 companies’ 2008-2012 annual reports</td>
<td>4 general items checklist on IAS 36.134d, no overall index</td>
<td>Overall, substantial non-compliance, descriptive analysis only</td>
</tr>
<tr>
<td>Camodeca et al. (2013)</td>
<td>UK</td>
<td>85 companies’ 2007-2011 annual reports</td>
<td>7 different IAS 36 disclosure items are analyzed separately, no overall index</td>
<td>Overall, substantial non-compliance, lack of disclosure especially after the financial crises, non-compliance varies for each topic</td>
</tr>
</tbody>
</table>
## Appendix

Table A: Papers about IFRS goodwill accounting published in 2014/2015 in journals not ranked

<table>
<thead>
<tr>
<th>Year</th>
<th>Author</th>
<th>Journal</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>Carlin, Finch, Tran</td>
<td>Journal of Economics and Development</td>
<td>Audit Quality Differences Among Auditors: The Case of Hong Kong</td>
</tr>
<tr>
<td>2015</td>
<td>Sudyn</td>
<td>International Journal of Economics and Society</td>
<td>Comparative analysis of accounting for goodwill: Domestic practice and international experience</td>
</tr>
<tr>
<td>2015</td>
<td>Eloff, Villiers</td>
<td>South African Journal of Accounting Research</td>
<td>The value-relevance of goodwill reported under IFRS 3 versus IAS 22</td>
</tr>
<tr>
<td>2015</td>
<td>Majid</td>
<td>Mediterranean Journal of Social Sciences</td>
<td>Resistance to Institutional Change through Decoupling</td>
</tr>
<tr>
<td>2015</td>
<td>Bisogno</td>
<td>Scholedge International Journal of Management &amp; Development</td>
<td>Goodwill and accounting discretion</td>
</tr>
<tr>
<td>2015</td>
<td>Jager</td>
<td>South African Journal of Accounting Research</td>
<td>IFRS 3 “grey area” regarding contingent liabilities</td>
</tr>
<tr>
<td>2015</td>
<td>Hogan, Matuszewski</td>
<td>The CPA Journal (accounting &amp; auditing)</td>
<td>Good Will Come of Goodwill, But Accounting Depends</td>
</tr>
<tr>
<td>2014</td>
<td>Agota</td>
<td>The annals of the University of Oradea: Economic sciences</td>
<td>Evaluation of the characteristics of goodwill in IFRS</td>
</tr>
<tr>
<td>2014</td>
<td>Laskaridou, Athanasios, Athanasios</td>
<td>American Journal of Applied Sciences</td>
<td>Detecting asset impairment earnings management on IFRS context: Some evidence from Greek listed companies</td>
</tr>
<tr>
<td>2014</td>
<td>Carlin, Finch, Tran</td>
<td>Journal of Economics and Development</td>
<td>IFRS Compliance in the Year of the Pig: Hong Kong Impairment Testing</td>
</tr>
<tr>
<td>2014</td>
<td>Loghin</td>
<td>SEA - Practical Application of Science</td>
<td>Emerging common law decisions in goodwill accounting regulation</td>
</tr>
<tr>
<td>2014</td>
<td>Loghin, Seria</td>
<td>SEA - Practical Application of Science</td>
<td>The relevance of goodwill reporting in the Islamic context</td>
</tr>
<tr>
<td>2014</td>
<td>Ratiu</td>
<td>SEA - Practical Application of Science</td>
<td>Accounting regulations for goodwill in an emerging country – the case of Romania</td>
</tr>
</tbody>
</table>
Table B: List of working papers (2014/2015) on IFRS goodwill accounting

<table>
<thead>
<tr>
<th>Year</th>
<th>Author</th>
<th>Title &amp; URL</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>Shimada, Homma</td>
<td>Analysis of the impact of goodwill impairment information on corporate value URL: <a href="http://iises.net/proceedings/20th-international-academic-conference-madrid/table-of-content/detail?cid=31&amp;iid=091&amp;rid=5400">http://iises.net/proceedings/20th-international-academic-conference-madrid/table-of-content/detail?cid=31&amp;iid=091&amp;rid=5400</a></td>
</tr>
</tbody>
</table>