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Reviewing IFRS Goodwill Accounting Research: Implementation Effects and Cross-Country Differences

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ABSTRACT

We review 42 studies from 2008 to early 2017 about IFRS goodwill accounting choices for recognition, impairment, and disclosure of goodwill, focusing on cross-country evidence of implementation effects. We develop a model of application of goodwill accounting based on IFRS 3, IAS 36, and country- and firm-level influences to analyze the research and to summarize existing evidence about goodwill accounting choices. We report evidence in support of IFRS accounting for goodwill recognition, impairment, and disclosure from many countries. However, evidence regarding value relevance is mixed. Overall, there is a lack of cross-country evidence regarding factors affecting goodwill accounting. Many studies show goodwill recognition, impairment, and disclosure are associated with economic and firm factors, and there is some evidence about the impact of managerial incentives and a lack of timeliness in impairment recognition. There is scope for more cross-country studies showing how institutional factors affect the application of IFRS 3 and IAS 36.

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) in various countries. We develop and use a framework of accounting choice to analyze recent research on the effects of application of IFRS 3 Business Combinations and IAS 36 Impairment to find evidence as well as research opportunities for the following questions: Are goodwill accounting choices value relevant? This is a necessary condition for the next set of questions: What determinants influence goodwill accounting choices? What are the consequences of different goodwill accounting choices? To what extent are those determinants and consequences explained by country differences? 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. The focus of our paper is, initially, cross-country studies because we seek evidence about the application of IFRS in a range of countries. To supplement this analysis (and because there are few cross-country studies) we also consider evidence from single-country studies.

Accounting for goodwill is important and controversial. Recognized goodwill often represents the single largest item on a firm's balance sheet (Boennen & Glaum, 2014). Accounting for business combinations has changed dramatically with the release by the US

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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, 2001b).¹ Similar requirements were introduced in IFRS 3, which applied beginning in 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 as well as adopting an impairment-only approach for goodwill and some other intangible assets. IAS 36, adopted from 2005, applies to impairment recognition, measurement and disclosure.

There are many concerns about goodwill accounting under IFRS 3 and IAS 36. Some research states that accounting for goodwill and impairment involves judgements and estimates, and is therefore very challenging and time consuming (e.g., Bloom, 2009; Masters-Stout, Costigan, & Lovata, 2008). Regulators have expressed concerns about the rigor of application of IAS 36 and the adequacy of disclosures (ESMA, 2013). EFRAG (2017) listed a number of issues of concern including the possible late recognition of impairment and thus the overstatement of goodwill; the cost and complexity of impairment testing and the judgements and estimates involved; the requirement to allocate (and re-allocate) goodwill to cash generating units; and the requirements to apply two methods to determine recoverable amount and to use a pre-tax rate.

Managers may use the discretion in the accounting standards to opportunistically manage earnings or to provide incomplete information (Boennen & Glaum, 2014), for example at the first-time recognition of goodwill, in the decision to impair goodwill, and regarding disclosure about goodwill and impairment. Managers' opportunism or incomplete disclosures could lead to lower-quality accounting information and value relevance, thus reducing the positive outcomes from adoption of IFRS. This effect may vary due to different country-level and firm-level influences. Thus, we expect these influences will affect goodwill accounting policy choices for recognition, measurement and disclosure, and the quality of the resulting accounting outputs.

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. Three other academic literature reviews focus on studies of both US GAAP and IFRS firms (Boennen & Glaum, 2014; Wen & Moehle, 2016; Wersborg, Teuteberg, & Zülch, 2014). In contrast to these reviews, we focus on the IFRS literature. We posit that there are notable variations in the institutional settings for financial reporting in the US and in IFRS adopting countries, thus raising questions about the comparability and generalizability of the US evidence. Schatt, Doukakis, Bessieux-Ollier, and Walliser (2016) provide a review of the usefulness of goodwill impairments by European firms. We add to this work by examining studies about the full range of goodwill accounting choices and searching for evidence of country effects among IFRS adopting 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 early 2017 period. We investigate the impact of time period and country of origin on the evidence presented. We focus on studies that are published in highly ranked academic journals to base our analysis on studies that demonstrate academic rigor.² We structure our review by presenting a model that captures the country- and firm-level factors that could influence firms' policy choices under IFRS 3 and IAS 36 and then using the model to explore the possible consequences of goodwill accounting choices. We review studies in two groups: Studies (1) exploring the value relevance of goodwill, goodwill impairment, and related disclosure and (2) analyzing possible country- or firm-level determinants influencing managers' accounting choices on goodwill, goodwill impairment, and related disclosure.

We find there is evidence in support of IFRS requirements for goodwill recognition, impairment, and disclosure from many countries. However, evidence in support of present accounting practices for other intangible assets is less strong. Many studies show goodwill recognition, impairment, and disclosure are associated with economic and firm factors. There is also some evidence of the impact of managerial incentives and indications of a lack of timeliness in impairment recognition. Many authors of studies in single-country settings call for better compliance with IAS 36 disclosure requirements. Overall, we find only a small number of studies that focus on multiple countries; thus, the evidence of the impact of institutional factors on accounting practices for intangible assets is not yet well developed.

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 twelve years since the widespread adoption of IFRS in 2005, this research may provide new insights and evidence of stronger relationships, which can be distinguished from the effects observed in studies of first time adoption in 2005. Second, we develop and apply a model of goodwill accounting choice to systematically review and group studies, thus identifying future research opportunities for academics. Our review also focuses on the research designs used. This enables us to differentiate findings and provide new insights regarding possible reasons for the differences identified. In addition, we are able to explore differences in findings based on time periods and countries of analysis, which should be relevant to the design of future studies. Third, our review aims to assist standard setters, regulators, and other practitioners to better understand the implications of research findings about accounting for goodwill and related country effects. Regulators in many jurisdictions have queried the application of the goodwill standards, particularly in relation to impairment (e.g., ESMA, 2014; FRC,

¹ Under codification, ASC 805 Business Combinations and ASC 350 Intangibles – Goodwill and Other.

² In the Appendix, we provide a list of papers published in other journals and a list of working papers that were publicly available at March 2017. 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.

2016:22; ASIC, 2016). The International Accounting Standards Board (IASB) has an active project on goodwill and impairment, and some constituents would prefer the reinstatement of amortization of goodwill. In 2018, the Board has tentatively decided not to consider a reintroducing amortization of goodwill and allowing some identifiable intangible assets acquired in a business combination to be included within goodwill (IASB, 2018). Thus understanding the evidence on goodwill accounting is crucial for sound decision making by standard setters.

The rest of the paper is organized as follows. Section 2 provides a description of IFRS 3 and IAS 36, outlines the journal selection process, and describes the model we use as the framework for our review. Section 3 defines and describes value relevance research and presents the selected set of studies. Section 4 reviews studies that provide evidence about determinants of goodwill accounting choices and the consequences of these choices. Section 5 concludes.

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 the board was formed in 2001 (IASB, 2015:11–12). 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, 2001b). The IASB received numerous requests from Europe and Australia to make similar changes to the accounting for goodwill. The IASB reviewed 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;
- identifiable intangible assets are recognized separately from goodwill;
- 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 stated that in 2017, 126 jurisdictions required IFRS Standards for all or most domestic publicly accountable entities (listed companies and financial institutions) in their capital markets.³ The application of IFRS 3 and IAS 36 (revised 2004) became mandatory for public companies in the European Union and in Turkey on January 1, 2005 (Ağca & Aktaş, 2007). Australia adopted IFRS on this date (Chalmers, Clinch, & Godfrey, 2008); Canada adopted in 2011 (Jordan & Clark, 2015) followed by Malaysia in 2012 (Abuaddous, Hanefah, & Laili, 2014). All of 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. Research framework

Research generally recognizes the impact of firm factors and managerial incentives on accounting policy choice and disclosure (Fields, Lys, & Vincent, 2001; Healy & Palepu, 2001). In addition, Ball (2006) cautioned that the use of IFRS would be affected by a range of country level institutional factors. Not surprisingly, research indicates that there are variations in IFRS adoption and practice due to country differences (Kvaal & Nobes, 2012; Nobes, 2013), and it is common for studies to use a number of proxies to capture country- and firm-level influences on policy choice and disclosure (see Brüggemann, Hitz, & Sellhorn, 2013; ICAEW, 2015). Stadler and Nobes (2014) focused on how the specific IFRS setting within a country (i.e., the status of adoption and application of IFRS and the previous national GAAP) interacts with industry factors and firm factors to affect policy choice. The authors conclude that national factors are “particularly influential when the choice does not affect an important accounting number; and industry and topic influence choice on some topics” (Stadler & Nobes, 2014: 386).

We draw on the prior literature to construct a framework for analyzing studies about goodwill (Fig. 1). Our framework is structured around input, action, and output. First, we consider the requirements for recognition and measurement, impairment, and disclosure of goodwill according to IFRS 3 and IAS 36 as input factors. These requirements are, in turn, affected by country-level and firm-level influences. Country-level influences are represented by “institutional features” and “economic conditions.” Firm-level influences are represented by “firm attributes” and “managerial incentives.” Next, the action stage refers to the research methods and techniques that are applied to answer various research questions. They include value relevance studies applying the Ohlson (1995) or Barth and Clinch (1996) models, event studies, and other regression models. Studies investigating determinants of accounting choices apply various regressions models or a Probit or Tobit model. Finally, the output stage shows the observed consequences of the goodwill recognition, impairment, and disclosure decisions of the firms, which are documented as research findings. These research findings can be grouped into two main subgroups: first, the value relevance studies and, second, studies exploring the importance of determinants associated with goodwill accounting choices. The output is path dependent: only when information is value relevant for

³ See <http://www.ifrs.org/use-around-the-world/use-of-ifrs-standards-by-jurisdiction/#analysis>, accessed July 28, 2017.

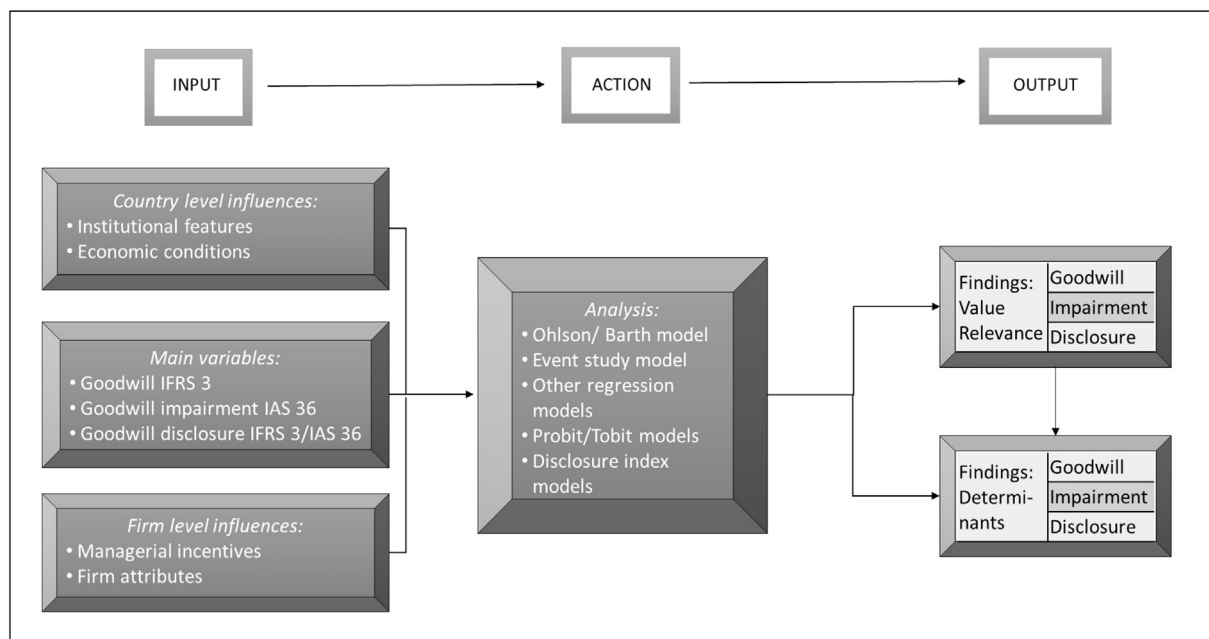


Fig. 1. Framework for review of IFRS goodwill accounting research.

investors we do explore if and how determinants influence goodwill accounting practices. Therefore, there is a one-directional arrow between the two categories even if the two areas of research are usually conducted independently.

We use this framework in analyzing the studies about goodwill policy choices. Our review is presented in Sections 3 and 4 of this paper. Both sections consider the observed outputs of the accounting policy choices made by firms in the input stage. The outputs we explore are: Value relevance of goodwill, impairment, and disclosure (Section 3); and determinants associated with goodwill, impairment, and disclosure (Section 4). We structure our review based on the output dimensions because this reflects the respective research streams. In each section we review cross-country and then single-country studies and we note the way that the country-level influences (institutional features and economic conditions) and firm-level influences (firm attributes and managerial incentives) are investigated in the studies. We follow this approach to meet the objective of our study, that is, to investigate the extent to which research provides evidence about the factors that affect cross-country application of IFRS 3 and IAS 36.

2.3. Journal selection and research method

Our approach to the literature review presented in this paper is consistent with Tranfield, Denyer, and Smart (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 with 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, replies, and papers that do not apply an empirical research design from the sample.⁴ The third step involved assessment of the quality of the studies. We selected only refereed papers from academic journals rated in quality rankings to provide a measure of high quality as commonly understood in management research (Tranfield et al., 2003). For the journal selection, we use three internationally recognized journal rankings, the United Kingdom (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.⁵ 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 addition, we found various studies about goodwill accounting in countries throughout the world in journals that are not covered by these well-

⁴ Here are some prominent examples of conceptual papers about goodwill accounting that have been published in high quality journals (e.g., Huikku, Mouritsen, & Silvola, 2017; Johansson, Hjelström, & Hellman, 2016). In addition, we have found some experimental designs exploring goodwill accounting effects (e.g., Hellman, Andersson, & Fröberg, 2016). However, because they do not provide evidence about the focus areas of our review we have not included the results in our analysis.

⁵ See <https://chartereddabs.org/academic-journal-guide-2015/>; <http://vhbonline.org/en/service/jourqual/vhb-jourqual-3/>; <http://www.abdc.edu.au/pages/abdc-journal-quality-list-2013.html>.

established rankings. They are excluded from our review.⁶ We added two working papers, *Glaum, Landsmann, and Wyrwa (2015) and *Amel-Zadeh, Faasse, Li, and Meeks (2013), which were written by researchers who had already published related research in high ranked journals, and one other research study, *Amiraslani, Iatridis, and Pope (2013), because they provided some cross-country evidence. The final data set comprised 42 papers in 27 academic journals during the publication period 2008–2016 and including early 2017.⁷ We discuss the papers collected in the next two sections of our paper.⁸

3. Value relevance of goodwill, impairment, and disclosure

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 firm (such as goodwill or impairment expense) and its share price (market value) or market return, for a sample of firms during one year or over a number of years. We interpret value relevance as an indicator of increased transparency (Barth, Beaver, & Landsman, 2001; Holthausen & Watts, 2001). 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 (11 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.

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 and Clinch (1996) to separate the book value and earnings variables from their goodwill components in order to test the value relevance of these accounting variables and the influence they have on the overall relation. Most studies (12 of 14 studies) we analyze for this review apply a variation of the value relevance model proposed by Ohlson (1995), see also Barth & Clinch, 1996. 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, or related disclosure is analyzed. When studies consider goodwill and other accounting items (for example intangible assets), 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 or returns); impairment expense should be value relevant; and goodwill or goodwill impairment disclosure should be value relevant, if the item contains new information.

Two studies do not use the Ohlson framework but apply an event study approach to look at the association between returns and specific goodwill accounting disclosures. 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 as well as country- or firm-specific variables if applied. The studies are numbered from VR1 to VR13 and VRWP, listing five multi-country studies first followed by single-country studies in alphabetical order for each country.

3.2. Multi-country value relevance studies (VR1–VR5)

VR1 *Aharony, Barniv, and Falk (2010) considered 2298 companies from 14 EU countries on transition to IFRS in 2005 (excluding early voluntary adopters) by comparing data for 2005 and 2006. They reported an increase in the value relevance of goodwill, which was larger in countries where national GAAP differed more from IFRS. They controlled for effects of other institutional factors, for example if IFRS was mandatory before 2005, the level of anti-director rights, and the difference between the former GAAP and IFRS measured by a GAAP difference score.

To learn more about long-term effects of IFRS, VR2 *Sahut, Boulerne, and Teulon (2011) applied a dataset for 2002–2007 financial years. They found that goodwill and other intangible assets were positively associated with share prices for listed firms (n = 1855) from 10 European countries. However, 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 intangible assets is markedly elevated for Finnish investors compared to investors in other countries before and after IFRS implementation.

For a sample of EU listed firms (France, Germany, Italy, Portugal, Spain, and the UK, n = 835) during the years 2008–2011, VR3

⁶ Following our research design, we have not included papers from the following journals: American Journal of Applied Sciences, European Journal of Law Reform, GSTF Journal on Business Review, International Journal of Economics and Society, Journal of Economics and Development, Research Journal of Finance and Accounting, South African Journal of Accounting Research, Scholedge International Journal of Management & Development, SEA- Practical Application of Science, South African Journal of Accounting Research, Mediterranean Journal of Social Sciences, The annals of the University of Oradea: Economic sciences, The CPA Journal, The Journal of Economic Asymmetries.

⁷ This includes papers that were initially published online until March 2017, but are finally included in later issues of a journal, e.g., *André et al. (2018).

⁸ Following the UK Academic Journal Guide we identified papers rated as 12*3, and 21*2; following the ABDC Journal Quality List 2013 we identified papers rated as 15*A (including 3*A*); 14*B, and 7*C; following the VHB Jourqual3 2015 we identified papers rated as 3*A, 8*B, and 19*C.

Table 1
Value relevance studies of goodwill accounting.

Nr.	Name	Period	Countries	Model	Main variable	Main results	Country/firm-specific variable
Multi-country studies							
VR1	*Aharony et al. (2010)	2005–2006	14 EU countries	Ohlson-Barth-model	GW per share	VR +, larger effect in countries where national GAAP differed more from IFRS	Institutional features: IFRS mandatory, Anti-directors-rights-index, GAAP differential scores, firm attributes: industry first digit
VR2	*Sahut et al. (2011)	2002–2007	10 EU countries	Ohlson-model	GW per share	VR positive but VR- for IFRS; single country analysis: VR + in Italy and Finland	-
VR3	*Laghi et al. (2013)	2008–2011	6 EU countries	Ohlson-Lapointe-Antunes model	GIMP	No VR except for 2008/2009 (indication of increased sensitivity during negative stress) and France only	Economic conditions: national default risk, subsample analysis: year, industry, country
VR4	*Knauer and Wöhrmann (2016)	2005–2009	20/6 EU countries	Abnormal return event study	GIMP	GIMP is VR	Institutional features: country's level of legal protection, firm attributes: verifiability of managements' explanations, volatility, leverage
VR5	*André et al. (2018)	2010/11	16 EU countries	Ohlson-model	GIMP Disclosure score	GIMP Disclosure is VR	Economic conditions: GDP, market capitalization; institutional features: legal system, enforcement; firm attributes: US listing
Single-country studies							
VR6	*Chalmers et al. (2008)	2005	Australia	Ohlson-Barth-model	GW	VR +	Robustness checks for size and industry
VR7	*Ji and Lu (2014)	2000–2009	Australia	Ohlson-model	GW + GIMP	GW + GIMP is VR, VR- after IFRS adoption	VR+ for more reliable information = firms with a positive measurement of the tangibility of assets or low leverage
VR8	*Baboukardos and Rimmel (2014)	2008	Greece	Ohlson-Barth-model	GW per share, Disclosure score	VR, if compliance with GW disclosure is high	Firm attributes: high or low level of disclosure, binary controls: loss firms and manufacturing
VR9	*Oliveira et al. (2010)	1998–2008	Portugal	Ohlson-model	GIMP	VR, VR + after IFRS adoption	Binary control: loss firms
VR10	*Martínez et al. (2014)	2005	Spain	Ohlson-model	GIMP	IFRS overall not VR, VR+ for GIMP and more pronounced for low leveraged firms	Firm attributes: size and leverage
VR11	*Hamberg and Beisland (2014)	2001–2010	Sweden	Ohlson-Barth-model	GW per share + GIMP	VR for GW in general, VR- for GIMP after IFRS adoption	-
VR12	*Hamberg et al. (2011)	2001–2007	Sweden	Abnormal return event study	GIMP per total assets	VR- because stock market revalued GW-intensive firms significantly upwards	Managerial incentives: degree of covenant slack, equity market concerns, compensation scheme, tenure, firm attributes: size
VR13	*AbuGhazaleh et al. (2012)	2005–2006	UK	Ohlson-Lapointe-Antunes model	GIMP	VR +	-
VRWP	*Amel-Zadeh et al. (2013)	1997–2011	UK	Ohlson-Barth-model	GW + GIMP	VR for GW in general, VR- for GIMP after IFRS adoption	Loss firms no VR

GW = Goodwill; GIMP = Goodwill impairment; VR = Value relevance; VR + = Value relevance increases; VR - = Value relevance decreases.

¶Laghi, Mattei, and di Marcantonio (2013) showed that goodwill was positively associated with share prices and goodwill impairment expense was negatively associated with share prices. They added a further explanatory variable, a measure of the default risk of the country where each company operated to proxy for general influences on stock prices. 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 of goodwill increased during periods of negative stress in financial markets.

VR4 ¶Knauer and Wöhrmann (2016) 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 that 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.

VR5 ¶André, Dionysiou, and Tsalavoutas (2018) investigated the level of compliance with disclosure requirements of IAS 36 and IAS 38 by 373 EU listed companies in the period 2010–2011. They found that more disclosure was associated with higher market values and less disclosure was associated with greater analyst forecast dispersion. The results were mainly driven by variation in the IAS 36 disclosures, which required more judgement and revealed more proprietary information. The models considered economic factors (GDP and market capitalization) and institutional setting (legal system, enforcement, and US listing) but as control variables, not as explanatory variables.

3.3. Single-country value relevance studies (VR6–13 + VRWP)

Further evidence is presented in single-country studies for Australia, Greece, Portugal, Spain, Sweden, and the UK. VR6 ¶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. In a subsequent study, ¶Chalmers, Clinch, Godfrey, and Wei (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.

VR7 ¶Ji and Lu (2014) came to a different conclusion for Australia. They analyzed 6650 firm-year observations from 2001 to 2009 for Australian-listed firms with capitalized intangible assets. The main result showed that capitalized intangible assets (including goodwill and other intangible assets) and goodwill amortization or impairment were value relevant, in both the IFRS pre- and post-adoption periods. Value relevance was higher in firms with more reliable information about intangible assets.⁹ The authors concluded that, overall, the value relevance of intangible assets declined in the post-adoption IFRS period.

VR8 ¶Baboukardos and Rimmel (2014) provided some empirical evidence in a post-implementation study for Greece. Analyzing 76 companies, they found goodwill to be value relevant in general. However, they added a measure of disclosure to proxy for firms' 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 associated with lower investors' expectations of future benefits; in these cases, goodwill was not expected to be value relevant.

Considering listed firms in Portugal during the period 1998 to 2008, VR9 ¶Oliveira, Rodrigues, and Craig (2010) analyzed the impact of IFRS on the value relevance of intangible assets, analyzing subclasses such as goodwill. 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.

VR10 ¶Martínez, Martínez, and Lin (2014) analyzed the value relevance of the IFRS reconciliation adjustments compared to local GAAP for 72 Spanish firms in the transition year. Their findings for overall value relevance showed that book value of 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, in particular goodwill impairment information. This was more pronounced for low-leveraged firms.

VR11 ¶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 2052 firm-year observations for the 2001 to 2010 financial years. They (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.

Also in Sweden, VR12 ¶Hamberg, Paananen, and Novak (2011) questioned how investors and others interpret impairment information by analyzing 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 expected higher returns to be associated with higher earnings, not the reverse. They therefore questioned whether the results suggested that market participants had interpreted the increase in earnings after adoption of IFRS 3 as an indication of higher

⁹ Ji & Lu (2014:196) 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.

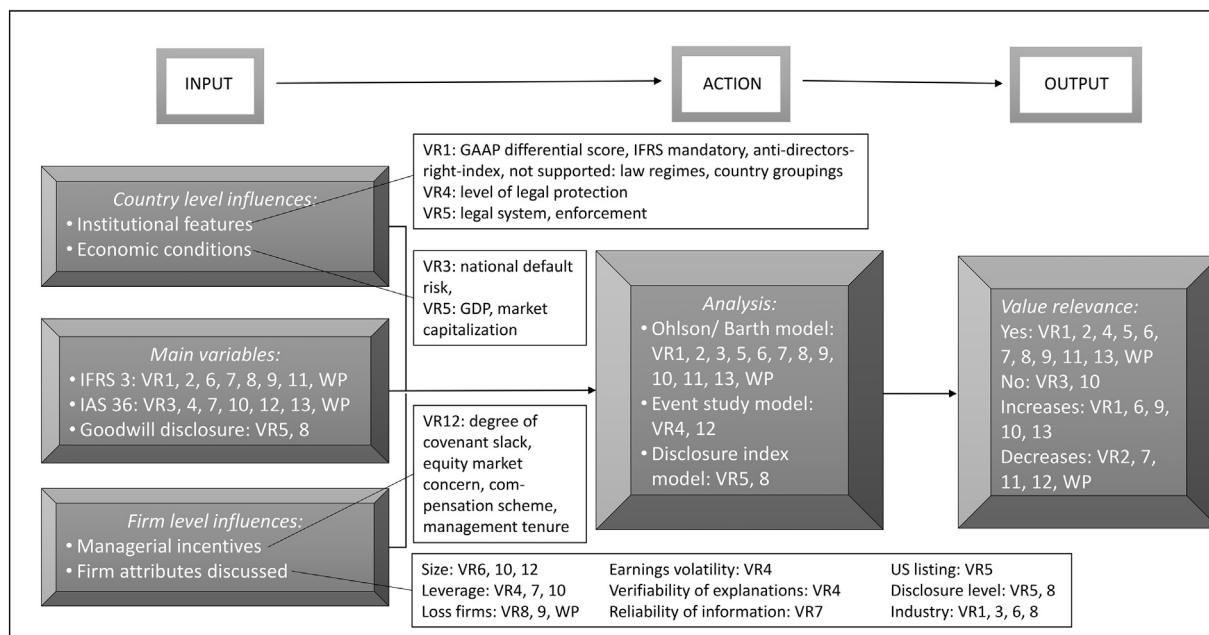


Fig. 2. Framework for review of IFRS goodwill accounting research: Variables, methods, and results of goodwill value relevance studies.

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. Nevertheless, the amount of goodwill itself was shown to be value relevant for investors.

VR13 *AbuGhazaleh, Al-Hares, and Haddad (2012)* used a sample of 528 firm-year observations, drawn from the largest 500 UK listed firms in 2005 and 2006, to assess the value relevance of goodwill impairment losses following the adoption of IFRS 3. They found a significant negative association between reported goodwill impairment and market value.

At the time of writing, the paper VRWP *Amel-Zadeh et al. (2013)* was unpublished. However, we include it in our analysis because its technique and sample are comparable to other studies. Considering 507 UK listed non-financial firms over a period from 1997 to 2011, the authors found that goodwill impairment expense (under IFRS 3) was negatively associated with market value while goodwill amortization (under prior UK GAAP) was not. They 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.

3.4. Synthesis, discussion, and avenues for future research

Fig. 2 reports the main inputs, analyzed variables, and observed outputs.¹⁰ Overall, we find many consistencies in the results of value relevance studies. Most of the studies (VR1–2, 4–9, 11, 13, WP) found that goodwill information is value relevant. This is apparent over different national settings and diverse influencing factors. The two studies that did not confirm this relationship have specific features. In VR3 the relationship disappears if an economic indicator, the national default risk, is added to the regression. VR10 looked at a special setting in the transition year where additional disclosure was provided. The results regarding the effect of IFRS adoption are not as clear and the evidence is mixed. Five studies (VR1, 6, 9, 10, 13) found an increase in the value relevance of goodwill (VR1, 6) or goodwill impairment (VR9, 10, 13) after IFRS adoption while four studies (VR2, 7, 11, 12) found a decrease for goodwill (VR2, 7) or goodwill impairment (VR7, 11, 12).

All studies comparing national GAAP and IFRS data for the same financial year in the transition period (VR1, 6, 10, 13) (usually 2005 or 2006 financial data) pointed to an increase in value relevance in this period. All studies used a comparable technique to measure value relevance, that is, the *Ohlson (1995)* price or/and return regression models. Thus, IFRS balances seem to be more value relevant than former GAAP for goodwill accounting. That said, some caveats apply. VR1 found that the increase in value relevance was greater when the difference between a country's national GAAP and IFRS was larger. However, researchers must ensure

¹⁰ Due to a high variance in time periods and sample countries/companies, it was not possible to perform a meta-analysis in a technical sense.

they understand the measurement of national GAAP/IFRS differences and the implications of the prior national GAAP practices in the countries they study.¹¹ VR10 (a single-country study) did not find an overall increase in value relevance although the authors observed an increase for firms providing more disclosure about goodwill. VR5 analyzed the relation between a disclosure score and market prices for various EU countries and concluded that impairment disclosure can be value relevant. These mixed results suggest further exploration of the role of disclosure as part of studies of the usefulness of accounting standards.

Studies covering longer time periods (VR2, 3, 7, 8, 9, 11, WP) use similar models and include some of the firm-year observations that were included in the transition-year studies. At the first view, they increase our confidence in the claim that goodwill has greater value relevance under IFRS. However, we have to consider that goodwill once recognized is a static amount (assuming no impairment). Questions should be asked about the timeliness of the goodwill recognized. In the Ohlson model the value relevance of goodwill should be greater in periods close to the transaction and disappear over time. Therefore, because of the assumptions of the Ohlson model, care must be taken in interpreting results based on the model.

Additionally, the evidence about value relevance of goodwill impairment was very mixed. There was evidence that other factors influenced value relevance such as the quality of the related disclosure. VRWP did not confirm value relevance of goodwill impairment for loss firms. Two more studies (VR1, 9) also controlled for the effect of 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. This is consistent with Schatt et al. (2016:307), who asked for more research to better understand the circumstances where the impairment-only approach is more useful, as well as circumstances where it is less adequate. Accordingly, the Ohlson model might not be appropriate to capture the relevance of impairment in these circumstances. Additionally, results of pre- /post-IFRS adoption studies of value relevance of goodwill and impairment do not provide sufficient evidence for commenting on the value relevance of IFRS accounting overall.

We identify two studies that did not use the general association approach. VR4 concluded that impairing goodwill could be a special event, which affects share prices or abnormal returns earlier than predicted. VR12 provided a different interpretation: the authors 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 such as event studies rather than value relevance models. New designs may alleviate the omitted variable problem present in some studies. In addition, other approaches may address the potential publication bias. 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. Thus, it would be useful for the data to be examined from a different perspective.

Some other technical issues could be addressed in future research. First, 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. In particular, IFRS 1 allows for several options when accounting for business combinations. According to the ICAEW's (2007:91) IFRS implementation report, all first-time adopters did not restate all pre-transition date business combinations. Based on application of IFRS 1, we would expect that the transition effects for accounting for business combinations could be difficult to observe. However, it is a serious omission that the potential impact of IFRS 1 options are not acknowledged in many studies.

Second, during the transition years many companies made additional disclosures to provide an in-depth analysis of the changes for analysts and investors. Therefore, the accounting effects were well explained. This communication emphasis may have disappeared over time. In this regard, VR10 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 intangible assets. They found an effect for the decomposed information for adjustments to intangibles that would not be disclosed in future years. VR8 found evidence that higher levels of disclosure enabled investors to better interpret the accounting numbers when predicting future performance. Accordingly, we encourage use of research designs that can differentiate between one-time communication effects and overall disclosure effects. In addition, text analysis techniques available to researchers have improved greatly and offer researchers the opportunity to examine impairment and other disclosures in annual reports, press releases, and other media. Data from text analysis can be used to enrich modelling in studies using a value relevance approach.

Third, 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 & Weber, 2006). Only one study (VR12) included managerial incentives in the design; therefore, there is potential for more investigation of the impact of managerial choices on goodwill and impairment balances. The US literature includes many studies considering the incentives underlying goodwill accounting (Boennen & Glaum, 2014). The IFRS literature would benefit from more development of the theories that are relevant in various countries, or groups of countries, and consideration of how the current and past institutional settings (including past accounting practices, auditors, and accounting enforcement) are expected to impact on managerial incentives.

Finally, 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. Christensen et al. (2013:147) reported that "across all countries,

¹¹ Nobes (2018) and De George, Li, and Shivakumar (2016) provide useful discussions of issues relating to measurement of national GAAP/IFRS differences, which should be considered by researchers.

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 critical for model specifications. Impairments and goodwill recognition are driven by the underlying transactions related to economic conditions 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 likely that capital markets process relevant information earlier than assumed by the models applied. Accordingly, the end of year financial report is unlikely to provide new information although it may have a confirmatory role.

These observations allow us to identify some research gaps that might be fruitful for future research projects, including the following:

- The Ohlson model has limitations for measuring value relevance of impairment losses. 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.
- Only a few studies analyze selected institutional factors and their influence on goodwill and goodwill impairment. Further, there is a lack of theory to capture more about institutional settings: Which institutional factors influence the value relevance of goodwill and goodwill impairment, and to what extent?
- Only one study includes management incentives in the model despite the likelihood that impairment decisions are affected by firms' incentive structures. How do incentives affect the value relevance of goodwill impairment disclosure, and how do institutional factors and management incentives interact?
- So far, international studies concentrate on European samples. Analyzing single-country studies (with the exception of Australia), we find only working papers or papers published in journals not ranked. There are opportunities to present evidence beyond studies based in the US, Europe, and Australia. There is also an opportunity to avoid the impact of concurrent events (e.g., as in Europe) if other countries did not introduce changes to enforcement or other governance mechanisms in the study period.
- Considering a longer timeline, are there differences between first-time adoption effects and longer-term effects? Has the communication strategy and strategic behavior changed?

4. Determinants associated with goodwill recognition, impairment, and disclosure

4.1. Scope of studies

In this section, we examine studies investigating how country-level and firm-level factors affect goodwill recognition, impairment, and disclosure. Generally, these studies use models to explore the importance of explanatory variables, looking for factors associated with asset and expense recognition or disclosure. For example, the incidence and amount of impairment is regressed against various explanatory variables, which should proxy for institutional features, economic conditions (country level influences in Fig. 1), firm attributes, and managerial incentives (firm level influences in Fig. 1). The authors aim to show a causal relationship (or an association) between the recognition of goodwill, impairment, or disclosure and the country- and firm-level influences, which affect how firms apply the related accounting standards.

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 second 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 to which we refer often have the following research expectations: The incidence and amount of impairment should be associated with country factors (such as prior national GAAP practices) and 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 chief executive officer [CEO] change).

4.2. Recognition of goodwill

Despite the interest to standard setters and practitioners, it appears no studies have examined recognition of goodwill and other intangible assets in merger and acquisition activity in a cross-country IFRS setting with the exception of **Detzen and Zülch (2012)*, who studied firms from France, Germany, and the UK.¹² In our literature search we found three studies which explored how the recognition of goodwill and other assets were related to economic and firm factors (such as market conditions as well as merger and acquisition activity) and managerial incentives (such as remuneration plans). Two studies looked at impact of IFRS 3 by considering future benefits or benefits to users of financial information (i.e., benefits for analysts) (*Table 2*, Panel A). In general, studies indicate

¹²In practitioner-sponsored studies, *Glaum, Street, and Vogel (2007)*, *Glaum and Vogel (2009)*, and *Glaum and Wyrwa (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 Wyrwa (2011)* report that the average ratio of goodwill to cost of acquisition is 61.5% for 322 European companies, indicating the importance of the topic of recognition of goodwill.

Table 2

Studies of determinants associated with goodwill recognition, impairment, and disclosure.

Study	Focus of study	Findings
Panel A		
*Detzen and Zülch (2012) 2005–2008 UK, France, Germany.	Recording goodwill Recognition of goodwill and CEO compensation (short term cash bonus)	The amount of goodwill recognized in an acquisition was positively associated with economic factors (related to the target company and synergies from the merger). It was also associated with prior amounts of CEOs' cash bonuses although the relationship was not linear. The evidence was stronger for non-finance sector firms and those from France and Germany.
*Bugeja and Loyeung (2015) 1998–2012 Australia	Recognition of goodwill and other intangible assets	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.
*Russell (2017) 1987–2012 Australia	Recognition of goodwill and other intangible assets	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.
*Su and Wells (2015) 1998–2008 Australia	Recognition of other intangible assets; future performance	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.
*Chalmers et al. (2012) 1993–2007 Australia	Recognition of goodwill and other intangible assets; analyst forecast accuracy and dispersion	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.
Panel B		
*Siggelkow and Zülch (2013) 2004–2010 Germany	Recording impairment Impairment, Big Bath, earnings smoothing, CEO change and bonus plan	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.
*Jordan and Clark (2015) 2013 Canada	Goodwill impairment and Big Bath	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.
*Mohd-Saleh and Omar (2014) 2006–2008 Malaysia	Goodwill impairment, firm ownership and CEO duality	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.
*AbuGhazaleh et al. (2011) 2005–2006 UK	Impairment, Big Bath, earnings smoothing, CEO change, corporate governance	Goodwill impairment was associated with recent CEO change, income smoothing, and Big Bath. In addition, there was a strong positive association with effective governance mechanisms.
*Avallone and Quagli (2015) 2007–2011 Germany, Italy and UK	Goodwill impairment and opportunism (growth rates)	The amount of goodwill impairment was positively associated with the amount of goodwill and negatively associated with profitability. There was evidence of managerial opportunism in choice of growth rates.
*André et al. (2015) 2000–2010 16 European countries	Goodwill impairment, conditional conservatism, enforcement	Asymmetrical loss recognition was lower under IFRS. This result was more likely in countries with stronger enforcement.
*Iatridis and Senftlechner (2014) 2006–2011 Austria	Goodwill impairment and CEO tenure	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.
*André et al. (2016) 2006–2015 Europe, US	Goodwill impairment, conditional conservatism	US firms recognized larger impairments and were more timely in recognizing impairment in 2008–2009 than European firms.
*Hamberg et al. (2011) 2005–2006 Sweden	Goodwill impairment, CEO tenure	Asymmetrical loss recognition was lower for the US firms. Impairment under IFRS was lower than impairment and amortization under Swedish GAAP. CEOs with longer tenure were less likely to recognize impairment.
*Giner and Pardo (2014) 2000–2011 Spain	Goodwill impairment, Big Bath and smoothing	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.

(continued on next page)

Table 2 (continued)

Study	Focus of study	Findings
*Caruso et al. (2016) 2006–2010 Italy	Goodwill impairment, Big Bath, smoothing and income maximization	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.
*Kabir and Rahman (2016) 2007–2012 Australia	Goodwill impairment, CEO tenure, corporate governance	The incidence and magnitude of impairment were more likely to be associated with economic factors for firms with stronger governance. However, stronger governance did not appear to impact impairment recognition in the first year of a new CEO's tenure.
*Abuaddous et al. (2014) 2011–2012 Malaysia	Goodwill impairment, Big Bath and CEO tenure	Around 25% 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.
*Majid (2015) 2006–2010 Malaysia	Goodwill impairment, Big Bath, CEO change, bonus plan and firm ownership	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.
*Omar et al. (2015) 2003–2009 Malaysia	Goodwill impairment, firm ownership, board and audit committee independence	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.
*Amiraslani et al. (2013) 2006–2011 EU, Norway, Switzerland	Goodwill impairment, conditional conservatism, timeliness, enforcement	Impairment was more timely in countries with better investor protection and stronger enforcement.
*Glaum et al. (2015) 2005–2011 21 countries including	Goodwill impairment, timeliness, enforcement	When CEOs had longer tenure, impairment was less likely. Impairment was more timely in countries with stronger accounting enforcement.
*Bond et al. (2016) 2000–2012 Australia	Impairment of goodwill, identifiable intangible assets, and property plant and equipment and explanatory factors	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.
Panel C		
Disclosure		
*Glaum et al. (2013) 2005 17 European countries	IFRS 3 and IAS 36 disclosure and various firm attributes and institutional features	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.
*Hartwig (2015) 2005, 2008 The Netherlands, Sweden	IAS 36 disclosure and accounting oversight, auditor, size, leverage, future prospects, industry, learning	Substantial non-compliance, Swedish companies more compliant than Dutch companies, compliance level increased over time, financial companies less compliant, other factors not significant.
*Mazzi et al. (2017) 2008–2011 16 European countries	IFRS 3 and IAS 36 disclosure and cost of capital	Significant differences in compliance levels across firms and time, compliance level increased over time, significant negative relationship between cost of capital and compliance, higher compliance levels only matter for sub-sample of firms that do not meet market expectations regarding goodwill impairment, relevance of enforcement system confirmed.
*Bepari et al. (2014) 2006–2009 Australia	AASB 136 disclosure (similar to IAS 36) and various firm attributes	Overall, substantial non-compliance, compliance increased significantly during the financial crisis, significant firm attributes are profitability, industry type, level of goodwill intensity, and Big-4 auditor.
*Paugam and Ramond (2015) 2006–2009 France	IAS 36 disclosure and cost of capital	Firms providing prospective disclosures were more likely to show lower cost of capital and lower analyst forecast error. Firms with prospective disclosures, but not booking impairment when expected to do so, did not benefit from lower cost of capital.
*Devalle et al. (2016) 2010 Italy	IFRS 3, IAS 36 disclosure and various firm attributes	Substantial non-compliance, interest cost/sales revenue only significant variable associated with compliance level, other results are not robust to type of index.

goodwill recognition is associated with economic and firm factors. There is less evidence of goodwill practices being associated with managerial incentives. Some studies question whether accounting for identifiable intangible assets has improved under IFRS.

*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. Thus, the variables used focused on economic conditions, with firm differences captured in the size variable. Country differences

(i.e., institutional features) were proxied by country clusters representing legal origin (code law for France and Germany, common law for the UK). In a subsequent variation of this model, the authors added variables to capture managerial incentives, namely, the amount of the CEO's cash bonus, the thresholds applying to the bonus, and the value of shares held by management. The authors found that the amount of goodwill recorded on acquisition was associated with economic conditions relating to the target company and expected synergies of the merger. It was also somewhat related to managerial incentives, as captured in the amount of CEO's prior cash bonuses. The evidence was stronger for non-finance sector firms and those from France and Germany.

The models were derived from the US literature, where this type of model has been used in many studies albeit without the need to effectively capture country differences (see Boennen & Glaum, 2014). *Detzen and Zülch (2012) added the country legal cluster dummy variable to allow for country variations and found evidence of differences between the clusters. Thus, there is opportunity to explore how and why the legal origin impacts on application of IFRS 3. In addition, researchers could look deeper to find what particular legal, contractual, or business features in a country are captured by the legal origin variable.

*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 were accessed from Datastream. The use of hand-collected data and data from databases is common in the studies reviewed in our paper. This approach, necessary because many variables of interest are not available in databases, has both strengths and weaknesses. For example, hand-collected data are a potentially rich source of information, but the collection of such data 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.

The other studies we located are single-country studies, and thus they focus on possible influencing factors in the economic conditions, firm attributes, and managerial incentives categories of Fig. 1. *Bugeja and Loyeung (2015) investigated the amount of the purchase price allocated to goodwill in 308 successful takeovers for a sample of Australian firms in the period 1998–2012 (pre-/post-IFRS study). The models used are similar to those of *Detzen and Zülch (2012). *Bugeja and Loyeung (2015) used a probit model with variables to capture economic factors, firm 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% of takeovers did not record goodwill. For firms recognizing goodwill on acquisition, the authors found that 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. On balance, the evidence of this study provides support for current IFRS standards because the accounting most strongly reflects economic and firm factors although there was some impact of managerial incentives via remuneration.

*Russell (2017) investigated the recognition of goodwill and other intangible assets by Australian firms in the period 1987–2012. 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 economic factors, firm factors, and managerial opportunism. For example, Russell (2017:211) stated: "Management recognizes intangible assets to signal firm economics and to act opportunistically."

*Russell (2017) recognized that the influencing factors interact with each other, as shown in our Fig. 1. His design adds to prior studies through the use of two stage models, employing an instrumental variables approach to control for endogeneity arising from a number of factors. In the first stage, he set up five models to arrive at dependent variables measuring share issues, leverage covenant breach, executive compensation, firm size, and future economic benefits (market to book value). The first three models related to managerial incentives and the last 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. Thus although the variables used were similar to prior studies, the modelling techniques allow for deeper investigation of interaction effects.

After IFRS adoption, *Russell (2017) 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. 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. The evidence provides stronger support for current IFRS accounting for goodwill than for identifiable intangible assets.

Another approach to evaluating goodwill is to consider its predictive value, that is, to examine the association between the amount of goodwill recognized and future performance (e.g., the amount of future cash flows) (see Boennen & Glaum, 2014, for US studies using this design). *Su and Wells (2015) 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 goodwill was associated with future performance. Therefore, the evidence supports economic arguments that goodwill is an asset with value. However, similar to [Russell \(2017\)](#), the evidence questions the usefulness of the amounts recognized for other intangible assets. The authors also 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 and found that analyst forecast error was less and dispersion was lower, primarily for firms that recognized higher levels of intangible assets. The authors concluded that 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 IFRS 3/IAS 36 (specifically the impairment only approach to goodwill) from an important user group. However, the evidence is drawn from only one country so may not be generalizable. Cross-country studies examining the same research questions would be particularly useful for standard setters. As noted earlier in our paper, studies must recognize the requirements of prior national GAAP when investigating the impact of changes related to use of IFRS.

4.3. Impairment of goodwill

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 conditions that should be associated with recording impairment while at the same time also investigating the effects of firm attributes and managerial incentives. The relevant accounting standard (IAS 36) suggests that economic conditions should be associated with impairment, and this is observed in many studies. 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. Several studies look for, but do not find, evidence of the impact of managerial discretion on impairment recognition. There are few cross-country studies, so the impact of institutional features is not well explored in the current literature.

4.3.1. Impairment and economic conditions

Most studies we found focus only on one country. We found five studies (drawing data from five countries) that showed 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 of results is consistent with the incidence of impairment reflecting economic conditions. We found only one study that did not report the expected relationship ([Giner & Pardo, 2014](#)). Overall, the evidence provides some support that application of IAS 36 reflects, at least to some extent, firms' economic conditions.

[Siggelkow and Zülch \(2013\)](#) demonstrate the approach commonly used in these studies. 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.

In other single-country studies, [Jordan and Clark \(2015\)](#) investigated goodwill impairment by Canadian firms 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, Al-Hares, and Roberts \(2011\)](#) investigated factors associated with recognition of goodwill impairment for UK listed firms in the immediate IFRS adoption period 2005–2006. 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).

We found one cross-country study using firms from Germany, Italy, and UK during 2007–2011. [Avallo and Quagli \(2015\)](#) found that the amount of goodwill written off is positively associated with the amount of goodwill held and negatively associated with profitability. [André, Filip, and Paugam \(2015\)](#) studied firms from 16 European countries in the period 2000–2010 and concluded that asymmetric loss recognition (i.e., conditional conservatism) was lower under IFRS. Firms that did not recognize impairment (despite economic indicators pointing to the need for impairment) experienced a more pronounced reduction in conditional conservatism. Conversely, firms recognizing impairments showed a smaller decline in conditional conservatism. The study shows the impact of IAS 36 on conditional conservatism in IFRS reporting. In respect of the exploring institutional features, the authors considered the impact of enforcement on levels of conditional conservatism but not on impairment recognition.

4.3.2. Impairment and managerial incentives

The following studies also consider the impact of managerial incentives and firm attributes on impairment recognition. [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” accounting, CEO change, leverage, or compensation. Other studies also failed to find the expected relationships related to incentives. [Iatridis and Senftlechner \(2014\)](#) found no evidence linking the amount of goodwill impairment

with the length of CEO tenure for Austrian companies in the period 2006–2011. In motivating their study, the authors recognized institutional features by pointing 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 that “the change in CEO does not significantly lead to higher impairment” (Iatridis & Senflehner, 2014:172).

*Jordan and Clark (2015) concluded that managers did not demonstrate “big bath” behavior, contrary to findings of prior Canadian and US research. Studies reported that “big bath” accounting occurred upon transition to an earlier standard in 2002 (Lapointe-Antunes, Cormier, & Magnan, 2008). The authors questioned whether managers would exhibit these opportunistic practices upon adoption of IFRS or whether they would use impairment to signal relevant economic information. The authors concluded the latter, and suggested that managers' behavior changed because of a different treatment of impairment expense on transition in 2013.¹³ Their 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 the impact of managerial incentives (measured through variables such as income smoothing, “big bath” behavior, CEO change, and management compensation) on impairment recognition was not observed in these studies using data from Germany, Austria, and Canada. These results contrast with evidence from US studies. 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.¹⁴

In the IFRS studies the results may reflect differences in the institutional settings and thus in managerial incentives in the German and Austrian firms compared to the US setting. *Siggelkow and Zülch (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. One study provides some evidence about the impact of differences in institutional settings on impairment recognition. *André, Filip, and Paugam (2016) investigated goodwill impairments for European and US firms in the period 2006–2015. Considering three measures of economic impairments (based on market values, book values, and negative earnings) the authors found that US firms recognized larger impairments than European firms and were more timely in recognizing impairment during the financial crisis period (2008–2009). There was less evidence of “big bath” accounting for the US firms (i.e., conditional conservatism was lower) and the extent to which impairments were recognized in line with economic indicators was greater for US firms. The authors did not explore which aspects of differences in institutional settings could explain the variation in results.¹⁵

However, a smaller number of studies of impairment recognition under IFRS conclude that the evidence points to managerial opportunism. *Avallone and Quagli (2015) concluded that 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.¹⁶ The authors focused on capturing the effects of managerial incentives and firm attributes. The country differences in their sample were not examined in any detail (beyond the use of country fixed effects in their models).

*Hamberg et al. (2011) investigated goodwill impairment in the immediate post-IFRS period 2005–2006 for Swedish firms. They found that the length of CEO tenure was negatively associated with the incidence of impairment (albeit at weak significance levels).¹⁷ *Giner and Pardo (2014) concluded that managers of Spanish firms were exercising discretion in the reporting of goodwill impairment and that “big bath” and earnings smoothing influenced their reporting.

*Caruso, Ferrari, and Pisano (2016) argued that the practices of Italian managers changed after adoption of IFRS. Based on 17 firms with merger and acquisition activity in the period 2006–2010, the authors reported that 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” accounting in the four years post-merger.

In summary, the evidence of the impact of managerial incentives on impairment recognition is not strong.¹⁸ There is some evidence in Sweden in the immediate post-adoption (*Hamberg et al., 2011) period and in the Spain post-financial crisis period (*Giner & Pardo, 2014). Other studies provide more general descriptive evidence (*Caruso et al., 2016, for Italy). *Avallone and Quagli (2015) extended the literature by considering firms in three countries and inputs into impairment models. They used

¹³ 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.

¹⁴ For example, *Siggelkow and Zülch (2013) recognized the potential for data limitations (related to the data that made up the proxies, for example, for bonus plans) to affect their findings.

¹⁵ The authors noted some differences in their conclusions compared to EFRAG (2016) and listed possible reasons for the differences, including sample composition and method of analysis (André et al., 2016:350).

¹⁶ They noted that estimates of cash flows were another potential manipulation tool but they did not have data available to investigate this.

¹⁷ 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.

¹⁸ Wersborg et al. (2014) reached a different conclusion because they considered 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.

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 that they do not 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.

Therefore, there are many opportunities to further investigate 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 predictions of the relationship of these features and the expected accounting outcomes will be particularly interesting. There are several working papers in production (see Appendix Table B) and it is to be expected that their evidence will provide additional insights into the relationship of impairment recognition and managerial incentives.

4.3.3. Firm attributes - ownership and corporate governance

Studies exploring the impact of ownership and corporate governance on impairment recognition provide insights about both firm attributes and institutional features, despite their single-country setting. In a study of UK firms, *AbuGhazaleh et al. (2011) included proxies to capture “big bath” and earnings smoothing, along with variables for CEO change, corporate governance structure, firm-blockholder ownership, and executive ownership. Variables for earnings management (“big bath”, earnings smoothing, and CEO change) were significant in the predicted direction, so the authors concluded that goodwill impairment reflected managerial discretion. However, they also included variables to capture corporate governance mechanisms¹⁹ to replicate the interaction of various factors on accounting output. The authors concluded that 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. *Kabir and Rahman (2016) presented similar evidence for Australian firms. They reported that the incidence and magnitude of impairment were more likely to be associated with economic conditions (change in cash flow, pre-impairment income, book to market ratio, and GDP growth rate) for firms with stronger governance.²⁰ However, stronger governance did not appear to affect the likelihood of impairment recognition in the first year of a new CEO's tenure.

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% 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. *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 same vein as the conclusions of *AbuGhazaleh et al. (2011) regarding impairment and stronger firm governance for UK firms. However, contrary evidence has also been presented. *Omar, Mohd-Saleh, Md Salleh, and Ahmed (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 (number of executive directors on the board). 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 (a finding consistent with 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 and in cross-country settings.

¹⁹ They carried out a factor analysis based on data measuring board independence, board activity, block ownership, executive ownership, and non-executive ownership.

²⁰ Like *AbuGhazaleh et al. (2011) the authors used several factors to capture corporate governance (including board independence, audit committee independence, Big 4 auditor, financial expertise of the audit committee, frequency of audit committee meetings, and CEO duality) in a composite measure and also in factor analysis.

4.4. Impact of explanatory factors on timeliness of impairment

*Amiraslani et al. (2013) investigated timeliness of impairment in a sample of 4474 firms from EU countries (and Switzerland and Norway) in 2006–2011.²¹ Using a model of conditional conservatism, the authors found that impairment expense was negatively associated with market returns. Considering institutional features, the authors found that the relationship was stronger for goodwill than other assets (tangible or other intangible) and in countries characterized by stronger enforcement and investor protection.²² 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 association 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. Considering institutional features, they reported that the association between impairment and economic performance was more timely in countries classified as having strong enforcement of accounting standards.²³ Both studies point to the importance of institutional features in goodwill accounting, which can be further explored in future studies.

*Bond, Govendir, and Wells (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 value of equity) for 5842 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 cash generating unit 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 about whether the application of IAS 36 is as intended by standard setters and regulators. Similar exploration in other countries (or groups of countries) would provide useful evidence.

4.5. Goodwill disclosure

The next group of studies examine factors affecting 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 application 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 with the IFRS standards, usually based on hand-collected data that measure disclosure in financial statement footnotes against the requirements of the relevant standard(s). Firms are then compared based on their disclosure scores. We have excluded from our sample those disclosure compliance studies that meet our general sample selection criteria but are descriptive only and do not explicitly seek to identify factors that explain the level, change, and dispersion in disclosure scores between firms and countries. (Camodeca, Almici, & Bernardi, 2013; Carlin & Finch, 2010; Carlin, Finch, & Laili, 2009; Gurarda, 2015; Guthrie & Pang, 2013). For the remaining six studies, consistent with our model in Fig. 1, the general 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 attributes (such as ownership and governance), and institutional (country level) influences. The following studies all found evidence of less than full compliance with mandatory disclosure requirements. Table 2 Panel C shows the sample, design, and main findings of the studies we review. All studies conclude that the disclosures observed are less than should be provided under IFRS. Three studies present evidence from a cross-country sample, all with an EU focus, and three analyze a single-country setting. There are many opportunities in this area for future research.

4.5.1. Cross-country studies on IFRS 3 and IAS 36 disclosure compliance

The most substantial cross-country compliance study was *Glaum, Schmidt, Street, and Vogel (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. They considered both firm attributes and institutional (country level) features that may explain the variance in compliance levels. Firm 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 institutional variables moderate and mediate some firm-

²¹ This study was published by Cass Business School, London. We direct readers to this study although it is outside our journal selection criteria because it is one of the small number of studies that consider cross-country explanatory factors for accounting for goodwill and impairment.

²² Measures of investor protection and enforcement were taken from Leuz (2010).

²³ Enforcement was measured based on the indices of Brown, Preiato, and Tarca (2014).

level factors. In particular, they found the strength of country-level enforcement substituted for firm-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 that 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. *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. (2013), he found that companies from the finance sector were less compliant than other 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 cross-country research is warranted.

*Mazzi, André, Dionysiou, and Tsalavoutas (2017) applied a 50-item checklist based on IFRS 3 and IAS 36 disclosure items to the 2008–2011 annual reports of 214 non-financial firms in 16 European countries. The authors reported an increase of the compliance level over time indicating learning. On a firm level, they found a statistically significant negative relationship between the firms' cost of capital and compliance with goodwill-related disclosure. Results were only confirmed for countries with a strong enforcement system. The authors concluded that higher levels of goodwill-related disclosure mitigate estimation risk in the cases of unexpected changes in earnings.

4.5.2. Single-country studies on IFRS 3 and IAS 36 disclosure compliance

*Bepari, Rahman, and Mollik (2014) examined the impact of the financial crisis on Australian firms' compliance with AASB 136 (IAS 36) disclosures about goodwill impairment testing. They applied an 11-item checklist to the 2006 to 2009 annual reports for 211 to 246 listed firms. Confirming the descriptive studies of Carlin and Finch (2010) and Guthrie and Pang (2013), the authors found a high level of non-compliance. They concluded that compliance increased over time, particularly during the financial crisis 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.

*Paugam and Ramond (2015) studied compliance with IAS 36 disclosure requirements by French firms, namely those listed in the SBP 250 index of Euronext Paris in 2006–2009. They found that firms providing prospective disclosures were more likely to have lower cost of capital and lower analyst forecast error. The authors concluded that the information contained in the prospective disclosures was more relevant to users' risk assessments than information in other descriptive disclosures. In addition, the authors reported that firms not booking impairment when they could be expected to do so did not benefit from disclosure being associated with lower cost of capital.

*Devalle, Rizzato, and Busso (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 (finance sector firm), or type of audit firm. In their study, the only significant explanatory variable for compliance was the magnitude of interest cost to revenue (financial costs to sales). The authors considered that this result reflected the important role of the banking system in Italy.

Overall, 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 firms and years. The factors affecting non-compliance and the effects of non-compliance are still to be more fully explored in many countries and thus present future research opportunities. Practitioner learning (in relation to the application of 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.

Beside firm-level factors, country-level factors are likely to play a role in promoting 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 accounting 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 to understand what is represented by the Big 4 variable.²⁴ Ways to discriminate between the large audit firms, in situations when there are differences between them, would be helpful.

Some studies have investigated the effects of industry sector membership on compliance, but we need better predictions of reasons for industry differences. Studies report inconsistent results for firms from the financial sector and other firms. However, it

²⁴ Lobo, Paugam, Zhang, and Casta (2017) differentiated between a Big 4-non-Big 4 auditor pair and a Big 4 auditor pair in joint audits. For French firms they found evidence for booking a larger impairment and a higher probability of impairment for a Big 4-non-Big 4 pair.

remains unclear whether financial sector 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 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.

4.6. *Synthesis, discussion, and avenues for future research*

Many studies provide evidence that the incidence and/or amount of impairment were associated with economic conditions (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 a single hypothesis test 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. 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 well-established literature based on US GAAP and US listed firms (Boennen & Glaum, 2014; Wen & Moehrle, 2016). 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 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 consider 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 the former usually provide 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 more informed 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 in the countries they study. Future work that builds theories about incentives in international settings would be particularly useful.

Early work has alerted researchers to differences between countries in accounting traditions and practices (Nobes, 1983) and about the impact of culture on accounting (Gray, 1988). 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 particularly based on a longer time series of data 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 addition 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 to the decision-making process of standard setters and regulators. The importance to market participants of goodwill was confirmed in many studies and countries. Concerning impairment of goodwill, the evidence points to the strong relationship of economic factors and impairment recognition. However, the evidence also suggests that there are many cases where impairment is not recognized when economic indicators suggest that it should be. The timeliness of impairment recognition varies between countries and appears to be more timely in countries with stronger accounting enforcement. On a positive note, there is some evidence that compliance with disclosure requirements has improved. These issues will be of interest to regulators. Standard setters have been challenged to improve and simplify the requirements of impairment testing (see for example [EFRAG, 2017](#)). Studies show that disclosures pertaining to impairment are important to market participants and that these participants are discerning users of the information provided. However, the present evidence is unable to assist with decisions about bringing back amortization of goodwill or changes to the methods used to determine the recoverable amount. Our review finds there are more single-country than cross-country studies. The consequences of between-country variation in goodwill accounting are not yet well understood. Related evidence would be useful and interesting to both 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 to capture the particular 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.

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Appendix

Table A

Papers on IFRS goodwill accounting published in 2014–2016 in journals not ranked.

Year	Author	Journal	Title
2016	Majid, Bakar, Lode	International Business Research	The timing of goodwill write-off: cases of initial overpayment
2016	Boyle, Carpenter, Luciani, Mahoney	Management Accounting Quarterly	Goodwill impairment adequacy: Perspectives of accounting professionals
2015	Carlin, Finch, Tran	Journal of Economics and Development	Audit Quality Differences Among Auditors: The Case of Hong Kong
2015	Nwogugu	European Journal of Law Reform	Goodwill/Intangibles Accounting Rules, Earnings Management, and Competition
2015	Sudyn	International Journal of Economics and Society	Comparative analysis of accounting for goodwill: Domestic practice and international experience
2015	Eloff, Villiers	South African Journal of Accounting Research	The value-relevance of goodwill reported under IFRS 3 versus IAS 22
2015	Majid, Che Adam	Mediterranean Journal of Social Sciences	Resistance to Institutional Change through Decoupling

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Table A (continued)

Year	Author	Journal	Title
2015	Bisogno	Scholedge International Journal of Management & Development	Goodwill and accounting discretion
2015	Fettry, Maratno	Research Journal of Finance and Accounting	The Determinant Factors of Goodwill Disclosure Level: Survey at Companies Listed in Indonesia Stock Exchange
2015	Jager	South African Journal of Accounting Research	IFRS 3 "grey area" regarding contingent liabilities
2015	Hogan, Matuszewski	The CPA Journal (accounting & auditing)	Good Will Come of Goodwill, But Accounting Depends
2014	Karampinis, Hevas	The Journal of Economic Asymmetries	Effects of the asymmetric accounting treatment of tangible and intangible impairments in IAS36: International evidence
2014	Ágota	The annals of the University of Oradea: Economic sciences	Evaluation of the characteristics of goodwill in IFRS
2014	Devalle, Rizzato	GSTF Journal on Business Review (GBR)	IFRS 3, IAS 36 and Disclosure: The Determinants of the Quality of Disclosure
2014	Gervasio	GSTF Journal on Business Review (GBR)	Goodwill in the Light of Market Capitalization Statement
2014	Laskaridou, Athanasios, Stergios	American Journal of Applied Sciences	Detecting asset impairment earnings management on IFRS context: Some evidence from Greek listed companies
2014	Carlin, Finch, Tran	Journal of Economics and Development	IFRS Compliance in the Year of the Pig: Hong Kong Impairment Testing
2014	Komissarov, Kastantin, Rick	The CPA Journal (accounting & auditing)	Impairment of Long-Lived Assets
2014	Loghin	SEA - Practical Application of Science	Emerging common law decisions in goodwill accounting regulation
2014	Loghin, Seria	SEA - Practical Application of Science	The relevance of goodwill reporting in an Islamic context
2014	Ratiu	SEA - Practical Application of Science	Accounting regulations for goodwill in an emerging country – the case of Romania

Table B

List of working papers (2014–2016) on IFRS goodwill accounting.

Year	Author	Title and URL
2017	Amano	Relationship between IFRS Voluntary Adoption and Goodwill URL: https://doi.org/10.2139/ssrn.2934805
2017 (2015)	Nguyen, Rahman, Nguyen	Goodwill Relevance and Disclosure Practice in Vietnam URL: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2668414
2016	Amorós Martínez, Caverro, Rubio	Pre and Post-IFRS Regulations for Goodwill and Their Effect on Financial Statements. A Comparative Study URL: https://ssrn.com/abstract=2786872
2016	Amel-Zadeh, Faasse, Li, Meeks	Stewardship and value relevance in accounting for the depletion of purchased goodwill, 4 URL: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2306584
2015	Gros, Koch	Goodwill impairment test disclosures under IAS 36: Disclosure quality and its determinants in Europe URL: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2636792
2015	Mazzi, Tsalavoutas, Liberatore	Insights on CFOs' perceptions about IAS 36 reporting URL: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2464103
2015	Lin, Young, Sun, Chiu	The Relationship between the Capitalization of Intangible Assets and Financial Analysts' Earnings Forecast Errors: The Effect of IFRS 3 and IAS 38 URL: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2654182 not available for download
2015	Akbaba	Goodwill Impairment: Quality and Consequences with the Evidence in Borsa Istanbul, URL: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2709335

(continued on next page)

Table B (continued)

Year	Author	Title and URL
2015	Shimada, Homma	Analysis of the impact of goodwill impairment information on corporate value, URL: http://iises.net/proceedings/20th-international-academic-conference-madrid/table-of-content/detail?cid=31&iid=091&rid=5400
2015	Glaum, Landsman, Wyrwa	Determinants of Goodwill Impairment: International Evidence, URL: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2608425
2015	Dynel, Klimczak, Pikos	Communicating uncertainty in financial statement narratives: Goodwill impairment testing URL: https://www.researchgate.net/profile/Karol_Klimczak/publication/281449212_COMMUNICATING_UNCERTAINTY_IN_FINANCIAL_STATEMENT_NARRATIVES_GOODWILL_IMPAIRMENT_TESTING/links/55e82ae608ae3e1218422520.pdf
2015	Klimczak, Dynel, Pikos	Goodwill disclosures under high uncertainty: Poland, URL: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2655525
2015	Schiemann, Richter, Günther	The Relationship between Recognised Intangible Assets and Voluntary Intellectual Capital Disclosure URL: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2487292 , paper is not available for download
2014	Stork Wersborg, Teuteberg, Zülch	10 Years Impairment-only Approach – Stakeholders' Perceptions and Researchers' Findings URL: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2494524
2014	Khairi, Laili	Goodwill Impairment Disclosures: A Test for IFRS Compliance in Malaysia URL: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2448096
2014	Saastamoinen, Pajunen, Ojala	Financial analysts' perceptions of goodwill accounting under IFRS URL: https://www.researchgate.net/publication/272244318_Financial_Analysts%27_Perceptions_of_Goodwill_Accounting_Under_IFRS
2014	Lali, Khairi	IFRS Compliance and Audit Quality Among Big 3 Auditors: The Case of Goodwill Impairment URL: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2358336

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