

Compliance with goodwill impairment disclosure and reasons provided by management: Evidence from South Africa

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Abstract

Purpose: The aim of this article is to investigate compliance with the IFRS disclosure requirements regarding goodwill impairment testing in the South African setting, using JSE-listed firms as a sample. The article considers the explanatory strategies used by management to provide reasons for goodwill impairment.

Motivation: Goodwill and its impairment are continually debated in accounting because of the nature of this intangible asset, and changes in the accounting standards regarding disclosure of goodwill and goodwill impairment.

Design/Methodology/Approach: Panel least squares regressions and a cluster analysis were used to analyse JSE-listed firms for the period from 2006 to 2017.

Main findings: The findings show that firms with material goodwill balances and an independent audit committee are associated with higher compliance with goodwill impairment disclosure. Firms that provided an excuse for impairing goodwill without taking responsibility for that impairment tended to have higher compliance regarding goodwill impairment disclosure than firms that did not provide any reason for goodwill impairment at all.

Practical implications/Managerial impact: Managers exhibiting compliance with goodwill impairment disclosure standards are inclined to furnish more comprehensive elucidation regarding the underlying reasons for the initiation of goodwill impairment. Investors, in turn, might find it useful to study and question the reasons provided as part of the goodwill impairment disclosure recognizing its potential significance in their decision-making processes.

Novelty/Contribution: The findings of the study provide evidence that aids understanding of goodwill impairments and the compliance with its disclosures, thereby enhancing knowledge of the effectiveness of the implementation of *IFRS 3*.

Keywords: goodwill impairment disclosure; goodwill impairment disclosure compliance; reasons for goodwill impairments; IFRS 3; IAS 36

Introduction

Goodwill is an intangible asset that represents the future economic benefit arising from other assets acquired in a business combination that are not individually identified and separately recognised (IASB, 2022a). The aim of the International Accounting Standards Board (IASB) is to develop a high quality, understandable and enforceable set of financial reporting standards, including the reporting of intangible assets. Standard-setters such as the IASB need to

understand the reporting behaviour of the managers of companies to ensure that this goal is met. The IASB issued the *International Financial Reporting Standard (IFRS) 3* in 2004, based on the assumption that impairment charges reflect the underlying economic attributes of goodwill better than systematic amortisation charges could. Par. BC 135 of *International Accounting Standard (IAS 36)* explains that it is not possible to measure separately any goodwill that is generated internally, and that the carrying amount of goodwill is shielded from the impairment of internally generated goodwill (IASB, 2022b). Therefore, the objective of goodwill impairment testing is to ensure that the carrying amount of goodwill is recoverable from expected future cash flows, generated both by acquired goodwill and by internally generated goodwill.

The presentation of accounting information is done in various ways. The location (recognition vs disclosure) of information can affect how shareholders and other users process accounting information (Libby & Emett, 2014). The disclosure of an accounting amount should not be a substitute for correct recognition of an accounting number. Barth et al. (2003) presented evidence that the recognition of an unreliable accounting amount, rather than simply disclosing it, can result in more informative information used by investors. In terms of *IFRS 3*, goodwill and its impairment should be included in the totals of the financial statements and should be further explained in the notes to the financial statements. Therefore, goodwill is not merely disclosed but recognised. Requirements under *IFRS 3* par. 59 and 61 stipulate that the acquirer must disclose information on the financial statements that will enable users to evaluate the nature and financial effect of a business combination and any adjustments made (IASB, 2022a).

Each year, an entity should consider both external and internal sources of information as an indication of whether an asset (goodwill) may be impaired (IASB, 2022b, par. 12). External sources include significant changes in the business climate, unanticipated competition, adverse action by regulators and/or changes in business contracts with major suppliers and distributors (Seetharaman et al., 2006). Internal sources include incorrect budget forecasting at the acquisition date of an asset, the loss of key personnel, a change in the company's name and/or failure to manage the acquisition (Seetharaman et al., 2006).

Goodwill impairment testing involves comparing the recoverable amount of the cash generating unit (CGU) to its carrying amount, as prescribed by *IAS 36*, par. 59 (IASB, 2022b). The recoverable amount calculation requires an estimate of the future cash flows that the particular investment will generate, and a suitable discount rate to calculate the present value of this investment. *IAS 36*, par. 130, stipulates that, to meet the requirements, firms must provide disclosure surrounding the variables used to determine the amount of impairment, as well as information on the reasons for the impairment (IASB, 2022b). Andreicovici et al. (2020) found that the application of impairment tests results in different levels of compliance with goodwill impairment disclosure, which can, in turn, result in differences in the valuation of securities (share prices). Logically, a higher level of disclosure should be beneficial to analysts, but the same accounting standard can result in variations in disclosure transparency, which could affect the level of information asymmetry between the firm and its stakeholders, including market analysts (Andreicovici et al., 2020). A higher level of disclosure could improve reporting quality, increasing the fundamental understandings of transactions by investors and would, in turn, reduce the cost of equity. Based on the discussion paper issued by the IASB on business combinations, some investors believe that companies applying *IFRS 3* do not disclose sufficient information, which implies that investors cannot fully understand how acquisitions affected the companies concerned in the year of acquisition (IASB, 2020).

The *IAS 36* impairment tests allow significant unverifiable estimates, which increase the possibility of managerial manipulation. Previous studies documented evidence that goodwill impairment is associated with big bath earnings (Andrews, 2012; Sevin & Schroeder, 2005) and earnings management (Caruso et al., 2016). Where the calculation of the recoverable amount is based on subjective assumptions and judgements, it does give rise to measurement uncertainty (IASB, 2020).

However, the IASB requires a high level of disclosure according to the framework provided in *IFRS 3* and *IAS 36*, regardless whether goodwill is impaired or not (IASB, 2020). A number of prior studies performed on goodwill impairment have focused on the particular reasons given for the goodwill impairment during the periods they were reviewed (Masters-Stout et al., 2008; Ramanna & Watts, 2012).

Understanding the reasons behind a firm's decision to impair its goodwill is crucial. Compliance with goodwill impairment disclosure in the financial statements is expected to aid analysts in valuing the firm. However, although the studies listed above have contributed to the literature by identifying and explicating the underlying reasons for goodwill impairment, they did not adequately consider compliance with goodwill impairment disclosure. These prior studies mostly provide descriptive statistics about the *content* of disclosure, without considering *compliance* with goodwill impairment disclosure (D'Alauro, 2013).

Some studies have explored firm-specific characteristics, including audit quality (Harber & Marx, 2020), firm performance (AbuGhazaleh et al., 2011), tenure of a chief executive officer (Masters-Stout et al. 2008), and corporate governance structure (Ahmed & Duellman, 2007) in determining compliance with goodwill impairment disclosure. However, few studies provide insight into the *reasons provided* by management for impairing goodwill; an exception is a study by Sandell and Svensson (2017). The IASB has documented comments on the disclosure of goodwill impairment from shareholders and analysts to enhance the information provided to investors about the subsequent performance of acquisitions (IASB, 2020). The IASB (2020) further notes that improved information could help investors to hold a company's management to account for management's acquisition decisions. Goodwill impairment disclosure involves the act of writing a response to any anticipated criticism from shareholders. The financial statements and explanatory notes include natural language as a way of constructing meaning from the numbers and measures used by management.

The present study contributes to the debate on which determinants result in compliance with goodwill impairment disclosure; it also sheds light on the actual reasons provided in natural language by management as to why goodwill has been impaired. According to par. 9 of *IAS 1*, the particulars of the goodwill impairment included in the notes to the financial statements should assist users in making economic decisions (IASB, 2022c).

The main aim of the present study is to determine whether compliance with goodwill impairment disclosure requirements is dependent on particular determinants. In addition, it set out to determine whether compliance with goodwill impairment disclosure can be predicted, based on the ways in which reasons are provided for goodwill impairment by management, by scrutinising the notes to the annual financial statements to identify the reasons/explanations reported for impairments.

This article makes a number of contributions. Firstly, it sheds light on the determinants of compliance with goodwill impairment disclosure in the period since the adoption of *IFRS 3*.

This could provide insight for standard-setters into how well the standard is being implemented. Secondly, managers, analysts and shareholders can use the results of this study to comprehend better the reasons provided by management for impairing goodwill, and to identify determinants which will give rise to improved compliance with goodwill impairment.

The remainder of the paper is structured into four sections. The next section provides a literature review with theoretical explanations. The section following explains the context of the research, followed by details on the research method used for the study. The findings on the determinants of compliance with goodwill impairment disclosure and reasons provided by management are then presented. The paper ends with a discussion of the findings, the research implications and a conclusion.

Theoretical background and hypotheses

According to par. 16 of *IAS 1* (IASB, 2022c), financial statements should not be described as complying with IFRS unless they actually comply with *all* the requirements of each applicable standard. Previous studies have, however, found that firms are inconsistent in applying the requirements set out in *IAS 36*, which can result in goodwill impairment disclosure to be confusing and inconsistent, which, in turn, can reduce its usefulness to analysts (Andreicovici et al., 2020). Wang (2019) points out that compliance with the accounting standards, including all the disclosure requirements, is the key to accounting quality. Par. 31 of *IAS 1* (IASB, 2022c) does however allow an entity not to provide a disclosure required by a standard if the resulting information is not material. For the purposes of this study, a goodwill materiality threshold is used as a filter to eliminate entities where the immateriality of goodwill might be offered as justification for non-compliance with *IAS 36*.

Compliance with goodwill impairment disclosure

As a result of management's discretion in determining the subjective discounted cash flow estimates, there is a high level of information asymmetry and information uncertainty related to goodwill impairment. This implies that when managers decide to provide information on goodwill impairment tests, this enables them to convey private information to analysts and to give them insight into the judgements and estimates that affected the impairment process (Andreicovici et al., 2020). If goodwill impairment disclosure is informative, it could help analysts to form an opinion of a firm from a financial perspective.

Barth et al. (2001) found that firms with more precise disclosures, as measured in financial analysts' ratings, have higher analyst coverage. Therefore, compliance with goodwill impairment disclosure could potentially improve analyst following. Analysts serve as information intermediaries and perform a central function in monitoring the capital markets.

Khairi et al. (2012) investigated disclosure quality and compliance level with *IAS 36*. They found that 90% of the firms in their sample failed to comply with the most basic elements of *IAS 36* pertaining to goodwill impairment testing. These authors ascribed the finding to a lack of experience among firms, since the then new *IAS 36* introduced a high degree of complexity and detail. Khairi et al. (2012) were of the opinion that the situation would improve over time. The present study focuses on a period after the implementation of *IFRS 3*, which should eliminate lack of experience in implementing the new accounting standards as a consideration, because managers should have become accustomed to the *IFRS 3* and *IAS 36* requirements by the end of the sample period in the present study (2006 to 2017). Goodwill impairments is not

a regular and predictable expense but rather an accounting entry made when the value of goodwill is determined to be impaired. Therefore, the observations in the sample period can vary widely among companies and industries and a trend analysis will not be appropriate.

There have been a number of studies on the compliance with goodwill impairment disclosure, but only a limited number of studies have been conducted on South African data. Mazzi et al. (2017) found that the firms included in their sample did comply with IFRS, but that country-specific influences may have had an effect on their results. A South African study investigating the level of goodwill impairment disclosure compliance of JSE-listed firms for the 2018 financial year end was performed by Day (2020). The sample consisted of 83 South African firms with goodwill balances exceeding 1% of the value of their total assets. The overall level of compliance was assessed to be poor, despite the fact that the sampled firms had material goodwill balances. A longer sample period such as the one in the present study (2006 to 2017) could provide more robust results with regard to compliance with goodwill impairment disclosure.

Determinants of the compliance with goodwill impairment disclosure

Bepari et al. (2014) presented evidence that *IFRS 3* compliance increased during the global financial crisis period and was associated with goodwill intensity, audit quality and profitability. A study by Boučková (2016) on European firms set out to determine whether companies with higher goodwill intensity disclosed the information required by *IFRS 3* on goodwill impairment. Goodwill intensity was determined by looking at a firm's goodwill in relation to its total assets. Of the 33 companies examined by Boučková (2016) in 2014, only six (18%) complied with all the requirements. This low percentage of compliance with *IAS 36* disclosure requirements limits the possible advantages of *IAS 36* severely (Boučková, 2016).

Ferramosca et al. (2017) highlight the risk that leniently audited discretionary fair value estimates could compromise the role of auditing. This risk can be mitigated if standard-setters enforce more disclosure by firms and by auditors. Such disclosure should include impairment test-related disclosure, such as the methods used, the time horizon and discount rates used by firms in compiling the financial statements, and the auditing procedures followed by auditors to verify these variables.

Amiraslani et al. (2013) investigated the judgements made by European companies in their IFRS compliance on policy disclosures relating to various assets, including goodwill. The majority of the sample firms did provide a relevant policy note, but variations in the depth of disclosure were found. Amiraslani et al. (2013) suggest that the relative materiality of impairment positions can influence compliance attitudes. Kabir et al. (2017) examined a different association, namely that between the goodwill impairment loss and goodwill impairment test-related disclosures. Their results confirmed that firms with understated goodwill impairment losses made greater goodwill impairment test-related disclosures.

Reasons disclosed for goodwill impairment

IAS 36 requires companies to disclose why goodwill impairment has occurred. This implies that each time any goodwill impairment occurs, a company is compelled to account for the events that led to that impairment. Because of the nature of goodwill impairment, which is often seen in a negative light, management needs to respond pre-emptively to anticipated critical evaluations from financial analysts, shareholders and the public. In this article, we

categorise the reasons presented by management by adopting the categories designed by Sandell and Svensson (2017). The forms taken by reasons for impairment can be classified as excuses, justification, refocusing, concessions, mystification, wordification, and silence.

An *excuse* is made when a company admits that the event or the act is negative or wrong, but simultaneously denies responsibility for the act (Scott & Lyman, 1968). The classification of the form of the reason as an excuse does not imply that the company is misrepresenting the facts; it merely indicates that, according to the company, the event was caused by something outside the company.

In a *justification*, management admits responsibility for the event, but denies the negative effects of the event. With reference to goodwill impairment, it is common for management to refer to its positive intentions or the outcome expected, based on normal business activities (Sandell & Svensson, 2017).

Refocusing refers to a rhetorical strategy where the reader's attention is redirected towards a different issue or event. The focus can also be redirected from the present to either the past or the future (Sandell & Svensson, 2017).

A *concession* is an acknowledgement of guilt, taking full or partial responsibility for the event (Sandell & Svensson, 2017). Synergy effects are a common reason for recognising goodwill at the point of acquisition. A concession for goodwill impairment may acknowledge that the expected synergies have not been realised. This does not necessarily indicate that the estimates used in the initial calculation of goodwill was inaccurate. If the estimates applied are described clearly and accurately and the nature and limitations are explained, the estimate can be faithful.

With *mystification*, an attempt is made to neutralise the event by providing a vague, or sometimes even an incomprehensible account (Sandell & Svensson, 2017). No real explanation is provided to the reader, as even more confusion is added to the account of the negative event.

Wordification refers to a type of account very similar to mystification. It does not add any new or substantial information to what is already known to elaborate on why an impairment has occurred (Sandell & Svensson, 2017). This can happen if accounting language is translated into natural language but obfuscates more than clarifies.

Silence refers to the strategy of completely withholding any comment from management on impairment and the reasons for it. The absence of comments could create a situation where readers can interpret the reasons for impairment in many different ways, for example, assuming that management is not aware of the requirements of the relevant IFRS or does not know the reasons for the goodwill impairment.

Amiraslani et al. (2013) found that the majority of firms in their sample appeared to be box-ticking their way through the compliance process. The reasons provided for goodwill impairment were often given using an excess of boilerplate language, which implies compliance through restatements of wording contained in IAS 36. Where box-ticking of IAS 36 occurs, overall compliance may appear high, but this may obscure low levels of compliance in areas where managerial discretion is required (Amiraslani et al., 2013). In their review of the goodwill impairment disclosure literature, Carvalho et al. (2016) also found that a significant number of disclosures on goodwill impairment were nothing more than a repetition of the paragraphs prescribed in IAS 36 and indicated a complete lack of effort by companies to report

on their specific situation. This could result in disclosures that are not informative and have little usefulness for the purposes of financial statements.

The present study thus undertook a closer inspection of the nature and extent of disclosures based on the assumptions made by management and the circumstances considered. As Carvalho et al. (2016) recommend, the disclosure index used in the present study assigned different weightings to the mandated disclosure items to ensure that the index captured compliance with goodwill impairment disclosures as accurately as possible.

Hypothesis development

Omitted disclosure (non-compliance with accounting standards) may lead to biased estimations (Mazzi et al., 2017). For this reason, more research is needed to explore the quality of disclosure and the level of compliance. Some studies found that firms do not comply fully with goodwill impairment disclosure (Boučková, 2016), even though investors demand it (Johansen & Plenborg, 2013). Goodwill impairment, although essentially a negative economic event, does provide informative insights into an organisation and could contribute to investors' decision-making.

Hypothesis 1 (H₁): Goodwill impairment disclosure is associated with understated goodwill impairment losses, goodwill intensity, audit quality and profitability.

Even though IAS 36 requires a significant amount of disclosure, not all firms adhere to these requirements. Some firms merely use the IAS 36 requirements as a box-ticking exercise, while other firms provide more in-depth information. Prior empirical studies have focused mainly on whether firms adhere to the IAS 36 disclosure requirements, whereas the present study aimed to determine whether there are particular determinants which result in higher compliance with goodwill impairment disclosure.

Hypothesis 2 (H₂): Compliance with goodwill impairment disclosure differs, based on the various ways in which reasons are provided by management for impairing goodwill.

According to the requirements of IAS 36, firms are required to give details surrounding the impairment of goodwill. The reasons provided by management can be classified into different categories, and these reasons (and the way management explains them) may predict compliance with goodwill impairment disclosure. Firms with higher levels of goodwill are likely to be more compliant with IAS 36, because they are more accustomed to the requirements than firms with lower levels of goodwill.

Research methodology

Sample description

The data sample was the financial statements of JSE-listed companies for a 12-year period (2006 to 2017) in which there were acquisitions that led to the existence of goodwill. This information was obtained from IRESS and JSE-listed firms' annual financial reports. It is worth noting that the JSE is not assumed to be an efficient market (Mlambo & Biekpe, 2007; Mlonzi et al., 2011). Firms from the financial sector were excluded from the sample because of the unique firm characteristics associated with the industry (Dahmash et al., 2009). In line with Dahmash et al.'s (2009) study, it was assumed that the nature of financial sector firms' assets

and liabilities, and their specific patterns of leverage, would make the inclusion of such firms in our data analysis problematic.

A total of 106 firms were included in the data sample. This resulted in 1 272 firm-year observations (106 firms x 12 years). In order to test H₁ and H₂, data were collected from the annual financial statements by means of a content analysis of each firm-year with reported goodwill impairment. Among the 1 272 firm-year observations in the final sample, there were 300 firm-year goodwill impairments (in other words, throughout the sample period of 12 years, goodwill impairment occurred 300 times). Table 1 reports the sample selection strategy and the sectors they belong to.

Table 1. Summary of data sample with goodwill impairments per industry.

Sector and companies for which firm-year observations are available	Number in each industry	Percentage of sample
Basic materials (BM)	48	16%
Consumer goods (CG)	13	4%
Consumer services (CS)	67	22%
Health care (HC)	8	3%
Industrials (IND)	122	41%
Oil & Gas (OG)	3	1%
Technology (TECH)	30	10%
Telecommunications (TELE)	9	3%
Total	300	100%

Source: Own compilation adapted from IRESS database (IRESS Expert, 2017).

An information content analysis was performed to determine whether firms complied with the mandated disclosure items for goodwill impairments as prescribed by *IAS 36*. The data were manually collected from the sampled firms' annual financial statements, which were obtained from the IRESS database. Compliance with goodwill impairment disclosure was determined by applying the disclosure checklist compiled from par. 134 and par. 135 of *IAS 36*. Partial compliance was built into the index to ensure that compliance with goodwill impairment disclosure was captured and not just the presence or absence of disclosure. One *IAS 36* disclosure requirement is a description of the approach used to value each key assumption. If, for example, details surrounding the selection of the growth rate are given, the firm does comply. However, a firm merely states that the growth rate was obtained from an external source, the firm only complies partially. Firms that do not give any description in this regard are not complying with this requirement. It is important to distinguish between companies that only make standardised disclosures and those that make an effort to provide more detailed explanations that allow users to understand better the impairment testing that was performed (Carvalho et al., 2016). Feedback received from the IASB from stakeholders suggests that companies often use the current disclosure requirements of *IFRS 3* mechanically as a checklist. The resulting disclosure could provide insufficient information for investors (IASB, 2020).

The disclosure index for each company was computed as follows:

- For each disclosure requirement, a score was allocated as follows: 1 if fully compliant, 0.5 if partially compliant, and 0 if not compliant.

- The required disclosure score was calculated by adding the items' score as 1, 0.5 or 0. The final score was computed by dividing the total score for a firm by the maximum possible score that the particular company was expected to achieve.
- From these scores, an arithmetic average was calculated to determine compliance with goodwill impairment disclosure.

The compliance index used by Bepari and Mollik (2015) was also employed in the present study. It was only one person that compiled the disclosure index, based on the IAS 36 requirements (see Appendix A).

The author, as part of her PhD thesis project at the University of Pretoria, under the supervisor, compiled the disclosure index. Accuracy and integrity were ensured by checking the data compilation in the index during various stages of compiling the index, as well as after the final index was completed. A compliance index (*dscore*) is a ratio computed by dividing the total actual score for a company by the maximum possible score that a company was expected to achieve. This unweighted compliance score was also used by Hodgdon et al. (2008).

Multivariate regression analysis to identify the determinants of compliance with goodwill impairment disclosure

Similar to the studies by Bepari et al. (2014) and Kabir et al. (2017), the present study empirically examined the role of disclosure in the notes to the financial statements, of estimates and legal judgments in accordance with IAS 36. The models used in these studies were modified to examine the level of comprehensiveness of disclosure and were applied in the present study. The disclosure index calculated for each firm was used as the dependent variable.

The proxy for understated goodwill impairment loss was a dummy variable, *UGIL*. This dummy variable was assigned a score of 1 if the market to book value was less than 1, but the goodwill impairment loss was zero, and a score of 0 otherwise. A Market to book value of less than 1 could occur to various reasons. Previous studies (Beatty & Weber, 2006; Kabir et al., 2017; Ramanna & Watts, 2012) found that a market to book value less than 1 is an indicator of possible goodwill impairment. IAS 36, par. 12, lists various external sources of information that indicate that goodwill may be impaired. One of these indicators is that the carrying amount of the net assets of an entity exceeds its market capitalisation and could indicate that management is delaying the impairment of goodwill. The proxy for understated goodwill impairment loss was based on the argument that goodwill is impaired when the book value of equity exceeds the market value of equity (Beatty & Weber, 2006). If goodwill impairment is understated, it is likely that the test-related disclosure is also reduced, therefore a negative sign was hypothesized.

A control variable used in the present study was materiality, measuring whether goodwill is material in relation to the total assets. Firms with a higher goodwill value are likely to have higher compliance with goodwill impairment disclosure. As in AbuGhazaleh et al.'s (2011) study, the present study controlled for firm-specific past performance and firm-specific changes in performance with the return on assets. Size was included as a control variable to ensure that the known effect of size on goodwill intensity was taken into account. Size was measured as the natural log of total assets at the end of period *t-1*, in line with AbuGhazaleh et al. (2011) and Beatty and Weber (2006). To control further for firm performance, leverage was included, in line with Verriest and Gaeremynck (2009). Intangible assets were included as a control variable, based on the assumption that firms with more intangible assets are likely to

comply better with IAS 36. If a firm uses a Big4 auditor, this should improve goodwill impairment reporting (Binti Omar et al., 2015). In South Africa, the audit market in all industries is concentrated on the Big4 audit firms (Kamolane & Odendaal, 2021), prompting the question whether mandatory audit firm rotation should be implemented. However, Harber and Marx (2020) have provided evidence that mandatory audit firm rotation is likely to impair audit quality. It is therefore important to determine the role that these audit firms play in compliance with goodwill impairment disclosure. The *independence of the board* was included as a control variable in line with Ahmed and Duellman (2007). *Audit committee independence and expertise* were included to control for effective corporate governance mechanisms, as AbuGhazaleh et al. (2011) suggest. Different industries were controlled for, because the tendency to impair goodwill may differ across industries (Binti Omar et al., 2015; Kabir & Rahman, 2020).

Based on this analysis of the prior literature, the following model was developed to test H_1 for the present study:

$$\begin{aligned}
 DISC = & \alpha + \beta_1 UGIL + \beta_2 MAT + \beta_3 ROA + \beta_4 \ln SIZE_{t-1} + \beta_5 LEV \\
 & + \beta_6 INTAN + \beta_7 BIG4 + \beta_8 BIND + \beta_9 AUDIND + \beta_{10} AUDEXP \\
 & + INDUSTRY + YEAR + \varepsilon
 \end{aligned}
 \tag{1}$$

where

- *DISC* is the goodwill impairment-related disclosure index;
- *UGIL* is a dummy variable indicating whether the goodwill impairment loss is understated;
- *MAT* indicates the materiality of firm *i*'s goodwill;
- *ROA* is the return on assets;
- *lnSIZE_{t-1}* is the natural log of total assets at the end of the prior year;
- *LEV* measures total liabilities divided by total assets;
- *INTAN* measures the total intangible assets excluding goodwill;
- *BIG4* is a dummy variable indicating whether a firm was audited by a Big4 auditing firm;
- *BIND* indicates the number of independent directors, scaled by board size;
- *AUIND* is the number of independent audit committee members, scaled by audit committee size;
- *AUDEXP* is a dummy variable indicating whether at least one audit committee member has a professional accounting degree;
- *INDUSTRY* is an indicator variable of industry; and
- *YEAR* is an indicator variable of the year.

Cluster analysis of compliance with goodwill impairment disclosure

For the 300 goodwill impairment sample years of the present study, a cluster analysis was performed by incorporating industry, the type of reason provided for goodwill impairment, as well as the disclosure index score. This was done to determine which reason type was or types were predominant in which industry. For each cluster type, the disclosure score index was also analysed.

A two-step cluster was performed to allow simultaneous analysis of both categorical and continuous data (Rundle-Thiele et al., 2015). Cluster analysis was conducted in two steps in order to optimize the benefits of each algorithm. The first step was to perform a hierarchical cluster analysis by using Ward's method to select the appropriate number of clusters (Carvalho et al., 2016). The second step involved using these results to set a non-hierarchical *k*-means clustering (*k* is the number of clusters chosen).

As part of the content analysis, the reported reasons for goodwill impairment were identified for each sample year. The reasons were classified in terms of the categorization of ways to account for goodwill impairment adopted from Sandell and Svensson (2017).

Empirical results

Univariate results

The most common descriptive statistics of data (see Table 2) used to test our hypotheses and the research results are described in this section. Where there are missing values, this indicates that the information could not be obtained from the annual financial statements. For most of the variables used to test the hypotheses, there were 300 observations. Only two variables, namely expertise of the audit committee (*AUDEXP*) and independence of the audit committee (*AUDIND*) had fewer observations, at 296 and 298 respectively, because the information relating to the audit committee expertise and audit committee independence were not disclosed in the annual financial reports concerned.

Table 2. Descriptive statistics for the continuous variables.

	N	Mean	Median	Standard deviation	Minimum	Maximum
<i>DISC</i>	300	0.69	0.80	0.26	0	1
<i>UGIL</i>	300	0.23	0.00	0.42	0	1
<i>MAT</i>	300	0.88	1.00	0.33	0	1
<i>ROA %</i>	300	9.47	9.88	15.09	-84.01	81.49
<i>lnSIZE</i>	300	16.28	16.34	1.75	10.22	21.39
<i>LEV</i>	300	0.58	0.59	0.19	0.06	1.13
<i>INTAN ZAR million</i>	300	9	9	10806	0	66772
<i>BIG4</i>	300	0.85	1	0.36	0	1
<i>BINDEP</i>	300	0.51	0.50	0.19	0	0.93
<i>AUDIND</i>	298	0.90	1	0.21	0	1
<i>AUDEXP</i>	296	1	1	0.06	0	1

Source: Own compilation.

The mean value of the disclosure index (*DISC*) suggests that firms scored on average of 69% on compliance. This is lower than the mean value of 81.9% found in a study by André et al. (2018), who investigated a sample of European firms (their study included only one sample year, whereas the present study included 12 years' data). The present study focussed on a single country for a longer period, where André et al. (2018) opt for one year but a large number of observations across many countries. However, even with the difference in sample strategy between the two studies, the findings indicate that the variance in compliance in reporting goodwill, do not differ significantly between the two studies. The present study's findings adds to the literature that certain information is not disclosed, which could lead to earnings management and reducing information value to investors (Ramanna & Watts, 2012).

LEV is an indicator of the firm's leverage. With a mean value of 0.58, it suggests that 58% of the firms' assets were financed with liabilities. The mean and median value were equal, at ZAR 9 million for intangible assets, excluding goodwill. The minimum value of 0 suggests that the intangible assets of some firms in the data sample consisted only of goodwill. The mean value of 0.9 and median of 1 for audit independence (*AUDINDEP*) suggests that most of the audit committee members were independent. Additional analysis (not tabulated here) indicated that, on average, an audit committee consisted of four members, and on average, 90% of the committee were independent. High levels of skewness and kurtosis were observed for all the variables in the regression. However, linear panel regression modelling only required the residuals to be normally distributed, not the variables in the equation.

A number of binary (categorical) variables were used in the testing of the first hypothesis. For these variables, a 0 or a 1 was assigned. The frequencies of these variables were investigated. *UGIL*, indicating whether goodwill impairment was undervalued, indicated that 77% of the sample firms did not undervalue their goodwill impairment. The remainder of the sample firm-years (23%) did undervalue their goodwill impairment. Based on the frequencies listed above, it seems that, for the majority of the sample firms, goodwill was not understated. The materiality of goodwill in relation to total assets is presented by *MAT*. If goodwill represented 50% of total assets, a score of 1 was assigned, and a score of 0 was assigned if the goodwill value was less than 50% of total assets. For the sample used to test this hypothesis, only 12.3% of the firm-years did not have a material goodwill balance, whereas 87.7% did. Therefore, it appears that goodwill was material for most of the observations included in the sample. Of the firms included in the sample, 85% were audited by one of the Big4 auditing firms. Most of the audit committees (99.7% of the sample) had at least one member with financial expertise.

Table 3 shows the correlation coefficients of the variables with evidence of independent variables that were weakly correlated with the dependent variables. Of the independent variables, materiality, size, use of a Big4 auditing firm, board independence and expertise of the audit committee were all statistically significantly correlated with the disclosure index score at the 1% level of significance (using two-tailed significance). The variables intangible assets and independence of the audit committee were statistically significantly correlated with the disclosure index score at the 5% level (using two-tailed significance). These correlations indicated that if the materiality of goodwill, independence of the audit committee, use of a Big4 auditing firm, size and expertise of the audit committee increased, the disclosure index also increased. However, undervalued goodwill impairment, ROA% and leverage were not statistically significantly correlated with the dependent variable.

In order to ensure that no multicollinear variables were used in the regression analysis, variance inflation factors were observed, and were found to range between 1.18 and 3.17. The risk of endogeneity was reduced by incorporating the independent variable (the size of a firm). From the descriptive statistics in Table 2, it was clear that there was a dispersion of firms in terms of firm size, and the market value could be influenced by the size of a firm. To control for this, the size of a firm was included in the regression as a control variable.

Table 3. Pearson correlation analysis.

	<i>DISC</i>	<i>UGIMP</i>	<i>MAT</i>	<i>ROA %</i>	<i>lnSIZE_{t-1}</i>	<i>LEV</i>	<i>INTAN</i>	<i>BIG4</i>	<i>BINDEP</i>	<i>AUDEXP</i>	<i>AUDIND</i>
<i>DISC</i>	1										
<i>UGIL</i>	0.033	1									
<i>MAT</i>	0.272**	-0.132*	1								
<i>ROA %</i>	-0.057	-0.336**	0.204**	1							
<i>lnSIZE_{t-1}</i>	0.159**	-0.054	0.122*	-0.038	1						
<i>LEV</i>	-0.050	-0.136*	0.333**	-0.015	-0.134*	1					
<i>INTAN</i>	0.145*	0.018	0.154**	-0.010	0.605**	-0.065	1				
<i>BIG4</i>	0.178**	0.057	0.065	-0.069	0.277**	-0.104	0.103	1			
<i>BINDEP</i>	0.238**	-0.047	0.095	-0.126*	0.534**	-0.184**	0.343**	0.246**	1		
<i>AUDEXP</i>	0.154**	-0.109	-0.022	0.012	-0.008	-0.088	0.020	0.138*	0.157**	1	
<i>AUDIND</i>	0.131*	-0.035	-0.080	-0.165**	0.268**	-0.247**	0.067	0.254**	0.510**	0.255**	1

** and * denote significance at <0.01 and <0.05 (two-tailed), respectively.

Source: Own compilation.

Multivariate results

Panel least squares regression was performed to identify the determinants of compliance with goodwill impairment disclosure, testing H_1 . Heteroscedasticity was not present, as the residuals were found to be normally distributed. The Hausman (1978) test was also performed to determine whether a fixed or random effects model should be incorporated into the model. Given the coefficient estimates from both the random and fixed effects estimators, along with the variance of the difference and associated p -values for the hypothesis that there was no statistically significant difference, only board independence (*BINDEP*) was found to differ between the fixed and random effects models. In addition, the (untabulated) results revealed the cross-section random effect contribution explained 56% of the total variance, thereby supporting the consideration of the random effects model.

Significant predictors of goodwill impairment

Based on the Phillips-Peron (PP) test, only *ROA%* and *DISC* were stationary, except regarding audit independence (*AUDIND*), board independence (*BINEP*), intangible assets (*INTAN*) and leverage (*LEV*). To account for this, first differences were considered for these variables.

Applying the first differences, the data series were found to be stationary. The results of this regression are presented in Table 4.

Table 4. Panel EGLS regression results.

$DISC = \alpha_0 + \beta_1UGIL + \beta_2MAT + \beta_3ROA + \beta_4DLEV + \beta_5DINTAN + \beta_6BIG4 + \beta_7DBINDEP + \beta_8AUDIND + \beta_9AUDEXP + \alpha_1lnSIZE_{t-1} + \alpha_2INDUSTRY$ (2)			
Variable	Predicted sign	Coefficient	t-Statistic
<i>C</i>	+/-	-0.63	-1.69
<i>UGIL</i>	+	0.06	1.65
<i>MAT</i>	+	0.24	3.46**
<i>ROA</i>	+	-0.01	-1.82
<i>DLEV</i>	+	-0.05	-0.36
<i>DINTAN</i>	+	-8.86	-0.35
<i>BIG4</i>	+	0.04	0.51
<i>DBINDEP</i>	+	0.11	1.03
<i>AUDIND</i>	+	0.21	2.45*
<i>AUDEXP</i>	+	0.66	3.22**
<i>lnSIZET1</i>	+	0.02	1.02
<i>INDUSTRY_CG</i>	+	0.21	1.25
<i>INDUSTRY_CS</i>	+	-0.05	-0.52
<i>INDUSTRY_HC</i>	+	-0.01	-0.08
<i>INDUSTRY_IND</i>	+	-0.06	-0.69
<i>INDUSTRY_TECH</i>	+	0.01	0.05
<i>INDUSTRY_TELE</i>	+	0.04	0.25
R^2	0.24		
Adjusted R^2	0.18		
Durbin-Watson	1.22		
F-statistic	3.89**		

** and * denote significance at <0.01 and <0.05 (two-tailed), respectively.

Source: Own compilation.

With the estimated generalised least square model presented above, the adjusted R^2 equals 18%, which is a low value. However, the aim of the analysis was to determine which of the predictors were statistically significant predictors (including direction and strength of the relationship) of the independent variables, rather than to build a predictive model for *DISC*, so the results are still relevant.

Of the independent variables, materiality of goodwill, independence and expertise of the audit committee were statistically significant predictors of the dependent variable (the disclosure index score). All three variables, materiality of goodwill, independence and expertise of the audit committee displayed a positive coefficient. Therefore, an increase in compliance with goodwill impairment disclosure was related to an increase in the materiality of goodwill (0.24, $p < 0.01$), audit committee independence (0.21, $p < 0.05$) and the presence of financial expertise in the audit committee (0.66, $p < 0.01$) (compared to no financial expertise in the audit committee). Consistent with theoretical arguments that the independence and expertise of an audit committee could improve disclosure requirements, the findings confirm the benefit of a well-functioning audit committee.

These findings supported H_1 , that there are certain predictors of compliance with goodwill impairment disclosure. The F-test of the regression model was statistically significant, indicating that all the coefficient values differed from 0. The residuals were approximately normally distributed. The standardised residuals were within acceptable limits, with a skewness of -0.77 and kurtosis of 0.69 . The findings were in line with the argument that firms that have higher goodwill balances (and thus are possibly more involved in merger and acquisition activities) are more accustomed to the disclosure requirements, providing higher compliance with goodwill impairment disclosure. These findings were consistent with the earlier findings of Bepari et al. (2014), who suggest that firms with high levels of goodwill intensity have a higher compliance level than firms with low levels of goodwill intensity. The fact that companies with large goodwill balances are associated with higher level of disclosure compliance could further improve the validity of information provided to investors.

The findings also revealed that good corporate governance mechanisms, as measured by the independence and financial expertise of the audit committee, seemed to result in a higher level of compliance with goodwill impairment disclosure. These results were consistent with those of Beekes and Brown (2006), which indicate that better-governed firms make more informative disclosures. The evidence that companies applying corporate governance principles comply better with IAS 36 disclosure requirements, supports the proposal of the IASB (2020) to add improvements to the disclosure objectives. Firms with good corporate governance mechanisms are likely to exercise positive discretion in providing information that is more useful to investors. Consistent with the expectation set out in H_1 , understated goodwill impairment was found to have a positive coefficient, but the correlation was not significant. It is worth noting that, according to the results set out in Table 4, in the present study, understated goodwill impairment came in just above the level of significance, with a p-value of 0.101, slightly above the 10% level of significance. In a related study, Kabir et al. (2017) found that firms that understated their goodwill impairment had higher goodwill impairment test-related disclosure. The difference between the results in the present study and those of Kabir et al. (2017) may possibly be attributed to the different data sample (Australian firms versus South African firms) and differences in the economic setting and industries of these countries. The present study provides evidence that understating goodwill impairment is associated with disclosure compliance. According to Libby and Emett (2014), managers have strong preferences about the recognition and location of accounting information, and will recognise items in accordance

to their preference. Understated goodwill impairment could indicate potential earnings management, and results of the present study revealed it is accompanied by quality disclosure. This could indicate that managers believe that by providing more detailed information, they can enhance the credibility and trustworthiness of their financial statements, potentially mitigating the suspicion of earnings management activities.

In summary, the materiality of goodwill and the independence and expertise of the audit committee were statistically significant predictors of high compliance with goodwill impairment disclosure. Audit committee members with relevant financial expertise are better equipped to comprehend complex accounting standards such as IFRS 3 and IAS 36. Their knowledge allows them to critically assess the disclosures provided by management, thereby ensuring completeness and accuracy. In turn, shareholders view an experienced audit committee as a safeguard against and the manipulation of financial statements. This is in line with the findings of Keune and Johnston (2012) suggesting that firms with audit committees with greater finance and accounting expertise is associated with less misstatements in a firm's financial statements. Firms that had material goodwill balances tended to display higher compliance with disclosure than firms with lower material goodwill balances. The impairment of material goodwill balances could have a substantial impact on a company's financial performance and valuation. The study presents evidence that managers understand the importance of providing detailed disclosure of material goodwill balances which will enable users of financial statements to assess the impact of impairment on financial results and make informed decisions. The findings support the view of the IASB (2020) that goodwill impairment disclosure provides meaningful information to shareholders and amortisation of goodwill should not be reintroduced. Belonging to a particular industry was not a significant predictor of goodwill impairment disclosure. The fact that the materiality of goodwill was a statistically significant predictor, but that none of the industries were, suggests that there was no industry that was more goodwill-intensive than others. The positive statistical prediction of an association between corporate governance and goodwill impairment suggested that firms that had sound corporate governance mechanisms in place were associated with higher quality of goodwill impairment disclosure. This would result in the presentation of more relevant and timelier financial information as required by shareholders (IASB, 2020). A recent article by Iatridis et al. (2022) supported the findings of the present study as it was found that the market response to impairment is less negative for high disclosure firms than for low disclosure firms; therefore, the higher the disclosure the more information is available to 'soften' the market response.

The results presented in Table 4 support H_1 which states that certain determinants affect compliance with goodwill impairment disclosure.

Robustness of the regression

For the purposes of testing H_1 , board size was deemed likely to have an effect on most of the independent variables. However, the literature did not consider board size a predictor of compliance with goodwill impairment disclosure itself, and therefore it was not likely to have a *direct* effect on compliance with disclosure in the present study. Board size was thus considered an instrumental variable, as it correlated with all the explanatory variables except with the materiality of goodwill and leverage at a statistically significant level ($p < 0.05$), but did not correlate with the dependent variable (compliance with goodwill impairment disclosure).

The results indicated sustainability for all the statistically significant variables. Based on these results, the final regression model presented in Table 4 can be accepted as robust to the model specifications.

In the next section, the results of the cluster analysis of compliance with disclosure of goodwill impairments is discussed.

Cluster analysis: Compliance with goodwill impairment disclosure

Cluster analysis was employed to address H_2 by detecting similarities within and differences between groupings, and deriving typologies. These groupings can give insight into the explanation strategies used by management to provide reasons for goodwill impairment, in conjunction with a firm's level of compliance with goodwill impairment disclosure, the size of a firm and industry of operations.

For each sample year, the explanation strategies that management used to provide reasons for impairment were classified in one of the seven categories. These explanation strategies, together with compliance with the disclosure of goodwill impairment, the size of a firm and the industry, were used as inputs for the two-step cluster analysis. The two-step cluster analysis was applied to the variables leading to the formation of four clusters. Cluster quality was indicated by the silhouette measure of cohesion and separation, with a value of 0.6, which is a value above 0.0, and thus suggests that the within-cluster distance and the between-cluster distance were valid (Norusis, 2012). Four predictors, namely "silence", "excuse", "wordification" and "mystification", were identified as much stronger predictors in each of the clusters. "Silence" had the most prominent influence on the cluster output, followed by "excuse", and then in third and fourth place by "wordification" and "mystification".

By contrast, "refocusing", "concession" and the size of a firm had less importance. Upon further investigation, it was found that in the 300 observations, the reason provided for impairing goodwill was presented as a concession and by refocusing only three times each. These explanation strategies thus appeared very seldom and had no influence on the cluster. The predictors with the highest importance were likely to form the different clusters in the present study. The size of a firm did not appear to play a significant role in determining the clusters.

Based on the cluster output, four groups were formed. Group 1 was represented by 73 observations, Group 2 by 52, Group 3 by 79 and Group 4 by 96 data observations.

Group 1: Silence

Group 1, the third largest group, consisted of 73 observations, representing 24.30% of the total sample. The firms included in this group did not provide any reasons for their goodwill impairment at all, and their explanation strategy was therefore categorised as silence. It seems that the firms included in Group 1 did not provide detailed disclosure of the nature of and reasoning underpinning their judgements, and this was indicated by the average of 60% in their compliance score. This could be an indication that these firms were using a box-ticking strategy to comply with the rules prescribed in IAS 36, and this could have negative consequences.

Group 2: Mystification

Group 2 was the smallest group, with 52 sample firm years, which represented 17.30% of the total sample. Most of these firms (75%) used mystification as their explanation strategy to give reasons for impairing goodwill. The other strategies included in this group were justification at 10% and concession and refocusing at 7.5% respectively. As with Group 1, where the strategy was categorised as silence, the overall disclosure score was low. Results from H_1 indicated that firms with a well-functioning audit committee (assumed on the basis of the expertise and independence of the committee) will have higher compliance with goodwill impairment disclosure. Therefore, if a firm has low compliance and no reason is provided for an impairment (silence), or the reason given is very vague (mystification), it may also suggest that the firm's audit committee is not effective in its compliance.

Group 3: Excuse

Providing an excuse was a strategy pursued by all 79 companies included in Group 3, which represented 26.40% of the total sample (the second largest group). The industries of firms in this group were the consumer service sector at 29.10%, followed by the industrials sector at 26.58%.

Of the four groups, this group contained the largest firms, in terms of size. Therefore, large firms appear to have the highest compliance with goodwill impairment disclosure, in contrast to smaller firms, which often had lower compliance with disclosure, as documented for Group 1. With a disclosure score of 0.81, it was the group with the highest overall disclosure index score. From Group 3's results, it seems that firms with the highest compliance with goodwill impairment disclosure tend to disclose goodwill impairment but offer an excuse as their reason for impairing goodwill. Therefore, this group does admit to the adverse event resulting in goodwill impairment but does not take full responsibility for it.

This was the only group which was not predominantly made up of firms from the industrials sector, and in which most firms were in the consumer services sector. In their study, Bepari *et al.* (2014) investigated firms' goodwill impairment disclosure compliance and controlled for industry effects. Similar to the results from the present study, they found a positive association between the commerce industry and compliance levels. Similarly, Amiraslani *et al.* (2013) found that high goodwill-intensive industries, such as consumer services, had relatively high levels of compliance.

Group 4: Wordification

Group 4 was the largest group, represented by 96 sample firm years, or 32% of the total group. This group had the second highest average disclosure index score at 0.71. The group contained the second smallest size firms of the four groups, with an average size variable at 16.23. These results suggest that firms with a disclosure score of 0.71 (which is the second highest of the four groups) used wordification to offer their reason for impairing goodwill. It is of particular interest that most South African firms did not provide any information content on why goodwill was impaired, other than a translation of the numbers into words. Even though this group had the second highest average disclosure index score of 71%, and thus exhibited relatively high reporting compliance, management was not providing *depth* of disclosure.

The results from the two-step cluster analysis gave insight into how management provided reasons for goodwill impairment, in conjunction with a firm's compliance with disclosure, the size of the firm and industry of operations. Three out of the four groups were dominated by firms from the industrials sector; in all three, the compliance quality was lower, and no clear explanations were offered for reasons for impairment, if any explanations were offered at all. Consumer services was the dominant industry for the fourth group, where disclosure compliance was highest, and often an excuse was offered to explain the reasons for impairment, but industrials came a close second. The findings thus support H_2 , indicating that the compliance with goodwill impairment disclosure differs, based on the various reasons provided by management for impairing goodwill.

Conclusion

This research examines South African firms' compliance with the IFRS disclosure requirements regarding goodwill impairment and the explanatory strategies used by management to provide reasons for goodwill impairment. In summary, the study revealed that firms with material goodwill balances are associated with higher compliance with goodwill impairment disclosure compared to firms with lower goodwill balances. Moreover, firms with an independent audit committee and at least one audit committee member with financial expertise are associated with higher compliance with goodwill impairment disclosure. The findings that good corporate governance mechanisms such as a firms' audit committee composition, influence their quality of disclosure, could address the managerial discretion embedded in goodwill impairment testing. The IASB acknowledges concerns about managerial discretion embedded in the goodwill impairment calculation and is investigating the possible re-introduction of goodwill amortisation (IASB, 2020). In this discussion paper the IASB welcomes feedback from all parties to ensure companies provide investors with useful information about the acquisitions those companies make. We provide useful insights for standard-setters and respond to the IASB (2020) calls for research about the usefulness of mandatory disclosures. Our findings suggest that higher disclosure compliance can be achieved if good corporate governance mechanisms are in place. In our view, the negative consequences associated with management judgement in the goodwill impairment calculation can be mitigated if good corporate governance mechanisms are in place.

Our findings should encourage shareholders to assess and use the independence and expertise of an audit committee as part of their decision-making process, as this could be an indication of higher quality of disclosure, therefore an increased level of available information. The results of the present study could assist analysts and investors in their investment decision making while assessing accounts such as goodwill as firms with higher goodwill balances are associated with quality of disclosure.

This article provides insights into South African managers' behaviour regarding the provision of details surrounding goodwill impairments. The firms that admitted to the negative implications of goodwill impairment (the ones that made an effort to provide an excuse) had the highest overall disclosure compliance. The firms that provided no reason for the impairment (the ones that employed silence as a strategy instead of actually explaining the event) also displayed the lowest disclosure compliance. Therefore, the ways in which reasons are provided by management for impairing goodwill do indeed differ for firms, depending on the level of compliance with goodwill impairment disclosure. This finding suggests that there is a correlation between the type of explanation of the reason provided by management (management's explanation strategy) and compliance with goodwill impairment disclosure.

Managers who comply with goodwill impairment disclosure are likely to give more insight into the actual reasons for impairing goodwill in the first place. Investors might find it useful to study and question the reasons provided as part of the goodwill impairment disclosure.

Future research should explore whether industries which are goodwill-intensive display higher compliance with goodwill impairment disclosure. In addition to this, a trend analysis could be performed to determine the compliance with goodwill impairment disclosure over time.

Our study does have limitations that provide avenues for future research. There is scope to include additional control variables such as board size, ownership structure and diversity of board members (gender, ethnicity and age). Interviewing audit partners can also provide valuable qualitative insight into goodwill impairment compliance.

The findings of the present study provide evidence that aids understanding of goodwill impairments and the compliance with its disclosures, thereby enhancing knowledge of the effectiveness of the implementation of *IFRS 3*.

Disclosure statement

No potential conflict of interest was reported by the authors.

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Appendix A:

Disclosure requirements under IAS 36

IAS 36 requires the disclosure of estimates and judgements used in estimating goodwill impairment losses in the notes to the financial statements (IASB, 2004b). This appendix sets out the detailed disclosure requirements contained in *IAS 36* §134 to §135.

Common disclosure for each CGU for which goodwill is allocated:

- a) the carrying amount of goodwill allocated
- b) the basis of recoverable amount (value in use or fair value less cost of disposal).

Disclosures required if the recoverable amount is based on the value in use:

- a) the key assumptions on which management has based its cash flow projections
- b) a description of management's approach to determining the value(s) assigned to each key assumption
- c) the period over which management has projected the cash flows, and if a period longer than five years was used, justification of the longer period
- d) the growth rate used to extrapolate cash flow projections beyond the period covered in the projections
- e) the discount rate(s) used to the cash flow projections

Disclosures required if the recoverable amount is based on fair value less cost of disposal:

- a) the valuation technique used to measure fair value less cost of disposal

Disclosures when fair value is not based on a quoted price for an identical unit

- a) each key assumption on which management has based its determination of fair value less cost of disposal
- b) a description of management's approach to determining the value(s) assigned to each key assumption
- c) the level of the fair value hierarchy
- d) if there is a change in the valuation technique, the change and the reason(s) for making it

If fair value less costs of disposal is measured using the discounted cash flow projections

- e) the period over which management has projected cash flows
- f) the growth rate used to determine cash flow projections
- g) the discount rate(s) applied to the cash flow projections

If a reasonable possible change in a key assumption of the unit's recoverable amount would cause the unit's carrying amount to exceed its recoverable amount

- a) the amount by which the unit's (group of units') recoverable amount exceeds its carrying amount
- b) the value assigned to the key assumption
- c) the amount by which the value assigned to the key assumption must change in order for the unit's (group of units') recoverable amount to be equal to its carrying amount

If the carrying amount of goodwill allocated to each CGU is not significant, that fact must be disclosed. Furthermore, the aggregate carrying amount of goodwill allocated to those units must be disclosed. In addition, if the recoverable amounts of any of those units are based on the same key assumption(s) and the aggregate carrying amount of goodwill allocated to them is significant, that fact should be disclosed. The following should also be disclosed:

- a) the aggregate carrying amount of goodwill allocated to those units
- b) a description of the key assumption(s)
- c) management's approach to determining the value(s) assigned to the key assumption(s)
- d) whether a reasonable possible change in the key assumption(s) would cause the aggregate of the units' carrying amounts to exceed the aggregate of their recoverable amounts, and
- e) whether the amount by which the aggregate of the units' recoverable amounts exceeds the aggregate of their carrying amounts.