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# Disclosure Quality of Goodwill Impairment Testing: A Disclosure Index

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## **Abstract**

*This study sets out to offer proof of several important questions relating to the quality of information disclosed on goodwill impairment process under the new requirements of FRS 36. This study investigates the compliance level and disclosure quality of FRS 36 by top 20 of Singaporean listed firms in SGX at 2007 based on their market capitalization. In order to achieve the objective of this study, the weighted index is chosen because this index is able to differentiate the quality and importance of each mandatory disclosure under FRS 36.*

*The weighted index was developed by constructing a disclosure scoring sheet, obtaining annual reports of 20 sampled Singapore firms for particular year, completing scoring sheet for each firms by assigned weighted for the disclosure items and calculating disclosure weighted index. The weighted index was analyzed to examine the firm's compliance with the FRS 36 disclosure requirements. The results of this study revealed that 18 out of 20 (90%) firms in Singapore failed to comply with the most basic elements of the FRS 36 pertaining to goodwill impairment testing especially in allocating goodwill into the CGUs and key assumptions used in determining the recoverable amount of CGU assets.*

**Keywords:** Impairment testing, FRS 36, Weighted Index, Singapore.

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## 1. Introduction

Rapid globalization of financial markets has given attention and awareness to demands for more internationally comparable firm's financial reporting. As the world continues to globalize, discussion of convergence and harmonization of national and international accounting standards has increased significantly. Convergence and harmonization of accounting is one way to promote more transparent and consistent reporting toward single sets of globally accepted accounting standards and to that end the International Accounting Standards Board (IASB), formerly International Accounting Standards Committee (IASC) produces international accounting standards (International Financial Reporting Standards – IFRS) for use by firms throughout the world. Its principal objective is to issue standards that increase comparability in financial reports produced by companies regardless of their country of origin (Choi and Meek, 2004). According to Teodori and Veneziani (2007), a transition to IFRS represents a complex process and creates a considerable impact on both accounting traditions and organizational procedures and operations within the firms.

Since 2005 there has been widespread adoption of IFRS standards on the mandatory basis for the firms around the world. The globalization of business and financial institutions has led more than 12,000 firms and more than 100 countries to claim they have adopted or will adopt IFRS (AICPA, 2008). However, the possibility of standardized application of IFRS across the different jurisdictions has been questioned because of the differences in compliance and enforcement mechanisms and dif-

ferent cultural and institutional contexts (Zeff, 2007; Soderstrom and Sun, 2007; Ball, 2006 and Nobes, 2006). As a result, it formulates excuses for some of firms to adopt the IFRS in overall. Consequently, it increases the attention and concerns in the comparability of reporting being achieved as well as the role of auditors and accounting standard setters' bodies in promoting compliance among the firms worldwide.

An understanding of the importance compliance of disclosure requirements in any accounting standards can lead to better prediction of the firm's overall performance. At the same time, the importance of financial disclosure will keep investors as well as group users well informed of material concerns of the firm itself. However, items that are disclosed are not so recognized, but usually are reported in the notes as defined by Al-Shammari (2005) quoted from FASB (1984) "disclosure refers to information about the items in financial statements and their measures that may be provided by notes". Compliance with an item is mandatory, if the item, when applicable, must be reported in the financial reports of firms in accordance with legal or financial reporting requirements. Voluntary compliance on the other hand, refers to disclosure of any item that is not so required. The importance of compliance with the requirements of accounting standards is that it enhances transparency, accountability, standardization, uniformity and comparability which in turn enriches the quality of decision of the group users and helps in proper allocation of resources. For the purpose of this study, the term "disclosure" will refer to the mandatory requirements in the FRS 36 –

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*Impairment of Assets* which facilitates the making of investment decisions.

It has long been recognized in the financial accounting literature that when an asset has a carrying value which is permanently in excess of its current value, the impairment of that asset's value should be recognized in the financial statements. In response to growing concerns voiced by constituents about the need for improved standards to accounting of goodwill, it requires new standards that provide firms a unique opportunity to provide more transparent financial disclosures by reporting goodwill impairments when viewed by external analysts. The improving in the compliance on the standards related to goodwill impairment leads to a better understanding by financial report users of the expectations about the assets itself. Thus, improved understanding should then, lead to an improved ability to assess future profitability and cash flows. This is consistent with Wyatt (2005) when he shows that the changing in the new accounting for goodwill is likely beneficial in financial reporting because better judgment in goodwill valuation is required.

A country's legal and institutional framework is likely to affect the extent to which listed firms domiciled in that country comply with requirements of IFRS. In Singapore, the legal and accounting standards formulated by Accounting Standards Council (ASC) and Singapore Exchange (SGX) plays an important role in ensuring firms to comply with the requirement of the standards. The reporting framework in Singapore that deals with the disclosure of impairment of goodwill is prescribed through the combined effects of the

new internationalized Singaporean financial reporting standards in FRS 38 - *Intangible Assets*, FRS 103 - *Business Combinations*, and FRS 36 - *Impairment of Assets*.<sup>1</sup> These standards should be applied on acquisition to goodwill acquired in business combinations. These standards are released by ASC to improve the information content of goodwill accounting which is applicable prospectively from the beginning of the annual period beginning on or after 1 July 2004. One of the main objectives of these standards was to increase transparency by ensuring that a firm's financial statements reflect the true value of their intangible assets.

With the introduction of the new standard, the new goodwill and intangible assets accounting should offer group users with enhanced information with which to assess the value of those assets over time, thereby improving the ability to assess future profitability and cash flows. However, with the new standard, there is a higher degree of complexity in relation to the conceptualising, measuring and reporting on goodwill which makes the scholars of accounting concerned with the difficulties associated with. An annual impairment testing of goodwill is expensive and complicated to implement. Previous studies on firms in three different geographical samples which are listed in U.S. Securities and Exchange Commission (SEC), Australia Stock Exchange (ASX) and FTSE Bursa Malaysia (BURSA) prove that firms have had difficulty in fully complying with new financial reporting standards of impairment of goodwill (Sevin et al., 2007; Carlin et al., 2008; Carlin et al., 2007). The new accounting treatment for

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goodwill is filled with subjectivity and ambiguity for financial reporting preparers and users, and potentially has serious impacts on financial reports. Therefore, while firms may be claiming full compliance with IFRS especially in impairment of goodwill standard, significant deviations still exist.

Therefore, this study investigates the level of systematic disclosure compliance of the goodwill reporting made by 20 top Singaporean listed firms for the year ended 2007 at Singapore Exchange (SGX) as a result of the initial application of the revised standards on treatment of goodwill introduced in 1 July 2004 based on its market capitalization. As analyzed previously, Singapore through ASC made the requirements of the FRS 36 *Impairment of Assets* mandatory progressively since 1 July 2004 for some or all listed firms, one of the most innovative standards both in theory and in terms of impact on firm's performance. Given the Singaporean regulatory background presented above, and considering that Singapore has been stating the goal of accounting harmonization since 2000, it is interesting to analyze which firms were already anticipating FRS requirements, especially with respect to goodwill impairment disclosure under FRS 36. In order to attempt the objective of this study, the weighted index is chosen because this index being able to differentiate the quality and importance of each disclosure. However, this study does not attempt to convince financial reporting users that goodwill for impairment disclosures have superior usefulness in terms of information in investment decisions, but instead presents advice as well as provides useful information

to them for better future valuation.

This rest of this study is organized as follows. Section 2 overviews the disclosure requirements of FRS 36 to Singapore listed firms. The outlines literature review of rankings, especially compliance and disclosure rankings are discussed in section 3. Section 4 presents the sample and methodology. The results and discussions are described in Section 5 and section 6 gives some conclusions and implications.

## **2. Disclosure requirements of FRS 36 – Impairment of assets**

As previously mentioned, the accounting reporting framework in Singapore that deals with the disclosure of impairment of goodwill is prescribed through the combined effects of the new internationalized Singaporean financial reporting standards in FRS 38, FRS 103, and FRS 36. These three standards should or will be applied on acquisition to goodwill acquired in business combinations. Based on the previous standard of goodwill reporting, there are three commonly used methods of goodwill. First, goodwill is capitalization as a permanent item with periodic review for write down purposes. Second, goodwill is capitalized with systematic amortization; and third, it is immediately written-off to reserves.

Now, with the adoption of the new standard, FRS 36 required that goodwill acquired in a business combination will no longer be amortized but will be tested for impairment annually or whenever events or circumstances indicate its value may have been impaired. Thus, under this new policy, goodwill with indefinite useful lives will no longer be amortized. Therefore, annual impairment test, instead of

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fixed annual amortization, should better reflect the underlying economics of the intangible assets (Wang, 2005). Further, Harper (2001) noted that the implementation of impairment tests offers a clearer picture to financial reporting users in the goodwill impairment process. Pursuant to the new treatment, the carrying amount of goodwill must be written down to the extent of any impairment and the impairment loss recognized in the calculation of profit (FRS 36).

Historically, the accounting of goodwill in Singapore is largely based on the IASs. IAS 22 *Business Combinations* has been adopted and issued as SAS 22 without any notable non-conforming items as at 31 December 1994. However, the issue of goodwill was not covered in detail in the standard. The standard only states that it was preparing a separate standard dealing with goodwill. After the IASC issued the ten revised IASs including IAS 22 as part of its Comparability Project, has led to the promulgation in Singapore of corresponding exposure drafts (ED) or Provisional Statements of Accounting Standards (PASs).

The main objective of IASC's Comparability Project is to enhance the comparability of financial reporting statements by reducing number of alternative treatments available in the existing IAS. As stated in Exposure Draft 32, *Comparability of Financial Statements* (E32), the objective is to "eliminate all but one accounting treatment when the different treatment represents a free choice for like transactions and events. When alternatives represent different treatments that should be applied in different circumstances...

ensure that the appropriate treatment is used in every circumstance" (Para. 18).

Thus, when PAS 26 are eventually adopted in Singapore, the treatment of goodwill in the existing SAS 22 will be reduced. Under the new treatment, goodwill on consolidation will have to be accounted for using the capitalization and amortization method, instead of the immediate write-off method as per stated under the existing SAS 22 will no longer be allowed. In order to implement the new treatment of goodwill, the PAS have generated much discussion and this has somewhat delayed their intended enforcement date.

The accounting standard for goodwill impairment under FRS 36 is effective from 1 July 2004. FRS 36 (issued in 1998) will be withdrawn when FRS 36 (revised in 2004) becomes effective. FRS 36 is applicable to goodwill acquired in a business combination for which the agreement date is on or after 31 March 2004. FRS 36 revised in 2004 is applicable prospectively from the beginning of the annual period beginning on or after 1 July 2004. This standard eliminates goodwill amortization, requiring instead that goodwill be evaluated for possible impairment. The shift from amortization to periodic reviews puts a new and continuous responsibility on management to determine the value of goodwill and also a new burden on auditors, regulatory bodies, and investors to evaluate management's determination (Hayn and Hughes, 2005).

In a simple word, FRS 36 deals with the mechanics of testing goodwill for impairment. FRS 36 requires goodwill to be tested for impairment as part of the impairment testing of the cash-generating unit (hereafter referred to

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as CGU), to which it relates, using a two-step approach. The carrying amount of goodwill must be allocated, from the acquisition date, to each of the smallest CGUs to which of that carrying amount can be allocated on a reasonable and consistent basis. A CGU is defined as the smallest identifiable group of assets that generates cash inflows from continuing use that are largely independent of the cash flows from other assets or groups of assets.

The two-steps impairment test involves the following:

**Step 1:** Compare the carrying amount of the CGU, including the goodwill, with its recoverable amount. The recoverable amount of such a CGU should be measured, consistent with the requirements in FRS 36, as the higher of value in use and net selling price (fair value). If the recoverable amount of the CGU exceeds its carrying amount, goodwill is not impaired. If not, then follow Step 2.

**Step 2:** Compare the implied value of goodwill with its carrying amount. Implied goodwill is the excess of the recoverable amount of the CGU to which the goodwill has been allocated over the fair value of the net identifiable assets that the entity would recognize if it acquired that CGU in a business combination on the date of the impairment test. Any excess of the carrying amount of goodwill over its implied value is recognized immediately, in profit or loss, as an impairment loss. Any remaining excess of the carrying amount of the unit over its recoverable amount is recognized as an impairment loss and allocated to the other assets of the unit on a *pro rata* basis, based on the carrying amount of each asset in the CGU.

From the above explanation, it clearly provides specific guidance compared to the previous standards on the goodwill impairment testing. However, the testing goodwill for impairment is not easy to implement since it creates enormous challenges for the financial reporting preparers as well as the financial statement users. Management also now has to explain what the goodwill amount represents, which create a highly attention and awareness when involved in acquisition process.

Massoud and Raiborn (2003) have provided a good summary of what managers need to assess for determining goodwill impairment. They note that the determination of impairment of goodwill leaves significant room for management interpretation, judgment and bias. It can be said that managers now can simply “pick a number out of a hat” when determining the impairment of goodwill. Now, managers have applied their own creativity to report the goodwill impairment process in the financial reporting. This is in line with the standard, with respect to goodwill CGUs represent “the lowest level within the entity at which the goodwill is monitored for internal management purposes”.

The test for impairment of goodwill under the FRS 36 is carried out at the level of the CGU or a group of CGUs which is representing the lowest level at which internal managements monitor goodwill. The FRS 36 also stipulates that the level for assessing impairment must never be more than a business or a geographical segment. This study believes that an understanding of the level of aggregation of CGUs is of prime significance. This is important because it has the capacity to impact on

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the likelihood of an impairment loss being recognized.

Prior research has suggested that one great challenge faced by firms in the context of FRS 36 is the manner in which goodwill is allocated between CGUs for the purposes of impairment testing. Wines et al., (2007) conducted a research in investigating the implications of the IFRS goodwill accounting treatment in Australian firms. They agreed that the first potential difficulty to implement the goodwill accounting treatment involves in identifying the CGUs. Further, Cearn (1999) found that the identification of an asset's CGU in impairment testing of goodwill is a subjective and so the process is open to be abused.

The identification of a CGU could be difficult in cases where a firm has acquired another entity and the latter consists of a number of separate subsidiaries, divisions and/or branches.<sup>2</sup> Lonergan (2007) added that a minimum future impairment write downs many corporate will naturally seek to report on the basis of larger or combined CGUs rather than smaller CGUs because acquired goodwill can be offset against the unrecognized value of internally generated goodwill or other recognized identifiable intangible assets of the more profitable parts of the CGU or of the different CGUs. Therefore, it creates a huge impact in the disclosure requirements in the firms annual report which affects the usefulness of this information. As a result, the requirement to allocate the goodwill into the CGUs needs a careful assessment by the firms.

A simple example is given to illustrate this scenario. Take a telecommunication firm (Darwisy Limited) which is highly profitable

local call and international call which exhibits lower average margins and far higher result volatility, under the same brand. The local call operates and is capable of being sustained independently of the international call and vice versa. However, if the both segments are combined to represent the one CGU, management could bias in estimating recoverable amount of a CGU to avoid impairment loss recognition. As a result, it might mislead financial report users in valuing the firm's performance.

The allocation of goodwill to CGU is a crucial process as the number of CGUs to which goodwill is allocated has the capacity to impact an impairment loss being recognized. The risk relating to allocate goodwill to CGU's is known as the CGU aggregation problem (Carlin et al., 2007 and Carlin et al., 2008), where too few CGUs are defined in the process of allocation of goodwill to CGUs. The inappropriateness of the CGU aggregation leads to the risk that impairment charges which should occur are avoided, or at least inappropriately delayed. This is important because various types of operations may have differing prospects of growth, rates of profitability, and also the degrees of risk.

In addition, the test for impairment is a one stage process wherein the recoverable amount of the CGU is calculated on the basis of the higher of (a) the fair value less costs to sell or (b) the value in use, and then compared to the carrying amount. In case the assessed value is less than the carrying cost, an appropriate charge is made to the profit and loss account. The goodwill appropriated to the CGU is reduced *pro rata*. The FRS 36 requires detailed disclosures to be published in the firm's annu-

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al report regarding the annual impairment tests. These include the assumptions made for these tests (assumptions employed in estimating recoverable amount), and the sensitivity of the results of the impairment tests to changes in these assumptions. Radebaugh et al., (2006) stress that these disclosures are intended to give shareholders and financial analysts more information about acquisitions, their benefits to the acquiring firm and the effectiveness and reasonableness of impairment reviews.

In term of assumptions used in determining recoverable amount through the discounted cash flow modeling, the selection of discount rates, growth rates, and forecast periods are key factors contributed to the outcome of impairment assessment especially when using the value in use method. The cash flows are estimated with certain assumptions which reflects all financial variables. Furthermore, the cash flow information is useful to annual report users in order to evaluate the ability of a firm to generate cash in the future and also in valuing the firm's performance. Most of the literature in finance, especially in discounted cash flow analysis agreed that three key assumptions are importance (Boyd, 2003 and Stegink et al., 2007).

The importance of these three assumptions in accounting goodwill for impairment testing has been successfully explored by Carlin and Finch (2008) and Lonergan (2006). Both studies reveal that net present value estimates for recoverable amounts can be highly sensitive even to small changes of those assumptions. The selection of those assumptions on which its current cash flow projections are usually based on firms consistent with past actual out-

comes, provided the effects of subsequent events or circumstances that did not exist when those actual cash flows were generated make this appropriate. Thus, there are highly correlated key assumptions and the cash flow forecasting which reflect the value of firms. Detail lists of disclosure requirements of FRS 36 used in developing the disclosure index will be illustrated in Section 4.

As an overall, under the new standard of accounting for goodwill impairment, goodwill on the accounting book is more challenging and less predictable. For financial information providers' view, goodwill becomes a more risky asset in that its value can impair abruptly, due to the accounting assumptions or market situation changes. On the other hand, for financial report users' view, the process of charging goodwill to expenses becomes less transparent and more unpredictable in that the measurement and reporting are more subjective to management's assessment. The difficulties faced by the financial information providers as well as the financial statement users makes accounting standards setters think ahead to refurbish and also straighten the enforcement when firms report the impairment of goodwill process in their annual report. The next section presents related literatures to the study.

### **3. Literature review**

Financial reporting disclosure in accounting standards has been examined in a number of ways in the accounting literature. Usually disclosure items required through accounting standards functioning as guidelines which define firms have to display its past or future transactions and events in their financial state-

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ments. The greater level of information disclosure in the annual report, the more useful that information for users in making investment decisions. There are different group of actors who come into contact with or are influenced in disclosing particular items in the financial statements – e.g. preparers, managers, accounting firms, auditors, financial analysts, investors. All these actors might have differing opinions and interests about what an accurate and useful of any disclosure items and each of them taking a different view depending on the environment of the reports (Gibbins et al., 1990).

Financial disclosure is an abstract concept that is complicated to measure directly. It does not possess inherent characteristics by which one can determine its intensity or quality like the capacity of a car (Wallace and Naser, 1995). It is therefore, necessary, whatever method adopts to quantify level of disclosure, to provide evidence that the measures are valid and reliable by specifying the operational procedures. The operational procedures by which numerical, weights or other symbols are assigned to item of disclosure are not specified. As a result, the study related to the level of disclosure of accounting standards among the firms is open and needs a highly capability of judgment in conceptualizing, analyzing and measuring the disclosure. Hence, this kind of study is very exciting to explore for reach a compliance level and disclosure quality of requirements of accounting standards among the firms worldwide.

It has been accepted that to obtain an internationally agreed perception of disclosure index as well as its item among the users and

preparers of financial statements is extremely difficult (Cooke and Wallace, 1989). It should also be noted here that any scaling method for assigning numerical, weights or other symbols to individual disclosure items has the potential to be misleading. This is because the level of importance which is attributed to a disclosure item varies according to the entities, transactions or events, the user, firm, industry, country and the time of the study. The underlying criterion for scoring each annual report studied was informative by which a firm which gives a group users more information on a particular disclosure item than another firm is awarded a higher score than the other. The financial disclosure level is not easily measured because the development and application of a disclosure index requires subjective assessments by the researcher applying the technique. Most of the literatures, captured by an “index” when study a quality of compliance and disclosure in accounting standards.

Historically, since the 1960s, there have been many empirical studies concerning the level of mandatory as well as voluntary disclosure in assessing the firms’ future performance. For convenience, they can be divided into two groups. The first group includes studies with a measure of disclosure that is not an index (Craswell and Taylor, 1992; Kasznik and Lev, 1995; Lobo and Zhou, 2001). Such studies only use a simple measure of disclosure, such as whether an item is disclosed or not.<sup>3</sup> The second group of researchers, which is more relevant to this study, includes studies that use a self-constructed disclosure index to measure the level of compliance and disclosure.

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The disclosure indices either un-weighted or weighted disclosure index have been used as research tools by a number of researchers including Singhvi and Desai (1971), Buzby (1974), Barrett (1977), Robbins and Austin (1986), Chow and Wong Boren (1987), Botosan (1997), Healy and Palepu (2000), and Guerreiro et al., (2008). The intention has often been to identify the motivation for the disclosure voluntary items of information in corporate annual reports by testing relationships between various firm-specific variables drawn from agency theory and voluntary disclosure. The firm-specific variables of firms adopting IFRS are the independent variables whereas the voluntary adoption of IFRS is defined as a dummy dependent variable.

In most cases attention has been given to the number of disclosures (whether an item in a pre-prepared check list has been disclosed or not). Such items have been scored dichotomously (either 0 for non disclosure as IFRS required, or 1 for disclosure as IFRS required). On the other hand, the studies of Yeoh (2005), Teodori and Veneziani (2007), Tsalavoutas et al., (2008) and Hodgdon et al., (2008, 2009) are to look into the level of compliance among the firms with mandatory disclosure requirements. It can be acknowledged that when we take a look on the previous research techniques applied (through their hypotheses tested and methodology used) the index is important aspect to measure the compliance and disclosure level.

However, this study does not seek to establish any contributory links between levels of disclosure and other firm-specific as mentioned in previous studies. The center of atten-

tion is on assessing the compliance level and disclosure quality through requirements of the standard and how really Singapore firms comply with the disclosure requirements of FRS 36.

The index used in this study is more complex with particular attention on the weighted disclosure index which also assesses the compliance level and quality of information disclosures as required in accounting standards. The attached weights to the disclosure items is to portray their importance. An assignment of the weights was to be made by judging the importance of a given item, relative to the other items in the checklist that the firms could disclose in their annual report. Researchers such as Cerf (1961), Robbins and Austin (1986), Chow and Wong Boren (1987), Wallace and Cooke (1989), Wallace and Naser (1995), Hooke et al., (2002), Naser and Nuseibeh (2003), Cheung et al., (2010) and Kang and Gray (2011) usually assessed the quality of disclosure by allocating weightings for the importance of each items to its disclosure. Through the allocating weightings for the importance item, the user groups will be able to compare and rank the compliance level and disclosure quality among the studied firms. Since this study will focus only one particular standard (FRS 36), the weighted disclosure index is used and relevant for this study because it is importance for group users to recognize the goodwill impairment testing process as required by FRS 36. Therefore, firms are required to disclose all the requirements of the FRS 36 as a signal of firm's activities and performance.

Cerf (1961) is found as a first researcher

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represented a major advance in applying the scientific approach to disclosure in corporate annual report. Cerf has developed a weighted index of disclosure based on a disclose checklist of 31 items to measure the extent of disclosure in the annual reports of 527 firms in the US, which focus on the information needs of professional financial analysts. He attaches weights to items of disclosure on the basis of what the investment analysts indicated were important and the weights were attached ranging from one to four. In measuring the compliance level among the firms, the final index for each firm was a percentage calculated by dividing the actual scores by their maximum possible scores.

Cerf's ideas were taken up in the 1970's when Singhvi and Desai (1971) investigated the disclosure of information to shareholders in the firm annual report of 155 US firms. A disclosure index was developed based on 34 items of information considered to be relevant to investment decision making by professional financial analysts. The researchers used 28 of the disclosure items and a further six were added based on the review of the literature and interviews with four financial analysts. Singhvi and Desai also employed same weights that were selected by previous study of Cerf on their study in identifying some of the characteristics of US corporations that were associated with the quality of disclosure.

The application of this technique has continued into the 1980's with Robbins and Austin (1986), Chow and Wong Boren (1987), and Cooke and Wallace (1989). Their studies used weighted disclosure to measure the level of disclosure among the firms studied. The

weighting index system they used is believed to reflect both the extent and importance of each disclosure item that forms the index. Their method attached a weighting (value) to each disclosure item based on the importance of the particular disclosure.

Cooke and Wallace (1989) used a weighted score of total 100 in their study. They believed that the quantitative factors have greater information than the qualitative factors. Therefore, they assigned higher weight at 65 points for disclosure in financial statements, disclosure in non-financial statements is at 25 points and timeliness of the release of annual accounts is only 10 points. Some more weight than the others were given if a firm provides a clear evidence of disclosure. In other words, the underlying criterion for scoring each annual report studied was truly informative by which a firm gives a users more information on a particular disclosure item than another firm is awarded a higher score. Through this method, they rank the firms studied according to the aggregate score. It is, therefore, easier to assess the level of disclosure compliance of the accounting standards among the firms.

According to Wallace and Naser (1995), the scoring of each annual report was awarded if a firm provides greater detail on an information item than another. Then, the aggregate score for each firm was converted to an index. The index represents the total details given by a firm as a percentage of the total details which each firm could disclose. The researchers believed that the reported information in the developed disclosure index is comprehensive enough to satisfy most user-groups. This is important because on the previous studies,

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there are only focuses on selected user group rather than most user-groups. This is also main concerns of this study, which looking to satisfy most user-groups rather than particular group in offered a guideline for measuring the compliance level on accounting standards among the firms.

A number of studies have been conducted through the weighting index in measuring the level of firms' compliance on requirements of disclosure in the stated standards is continuing to attract researchers in 2000's. Hooke et al., (2002) empirically developed disclosure index to assess the extent and the quality disclosure on the information gaps in annual reports of New Zealand electricity industry. The relative importance of index items is brought into account using a system of weights. Their studies decided to use a score of 5 as representative of standards disclosure. The considered 5 point scale provides enough sufficient range to allow the scorer to differentiate between varying degrees of detail and importance in the disclosures. Therefore, it appears that through using the weighted index in appraising the firm's compliance level, it enables group users to careful monitor firm's activities, assess their performance and also develop on-going understanding their future direction.

Naser and Nuseibeh (2003) investigated the quality of information disclosed by a sample of non-financial Saudi firms listed on the Saudi Stock Exchange. They designed the disclosure index basing on the three major areas which are mandatory, voluntary closely associated with mandatory and voluntary unrelated to mandatory after taking into consideration financial reporting requirements in Saudi

Arabia. Their studies employed weighted index to analyze the extent of Saudi firms compliance with requirements of accounting standards because is expected to give a more objective index. In giving the weighted, it is based on the importance given to each item of disclosure by seven user groups. The five weighting points is given to items viewed as very important, four points for those viewed as important, and two points for some importance and one point for little importance and ranks the sectors based on its mean and median. The disclosure index scored by each firm was then divided on the maximum score. By using the disclosure index they successful managed to measure the compliance level of studied firms.

In an analysis among Fortune 100 largest listed Chinese companies of the quality of disclosure practice, Cheung et al., (2010) has developed the Transparency Index. The index consists of 56 criteria (questions and sub-questions) which form the scorecard used to assess each firm in the sample. This study contributes to the existing disclosure literature by adding a quantitative dimension to the disclosure measures. Firms that omit or do not comply with a specific scoring criterion receive a 'poor' score (score=1), meeting the minimum compliance standard earns a firm a score of 'fair' (score=2), while firms that exceed the minimum requirements and/or meet international standards receive a higher score (score=3). Based on the disclosure index, this study revealed that there is a positive and significant relation between company transparency, as measured by the Transparency Index, and market valuation.

Furthermore, Kang and Gray (2011) also

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applied the disclosure index in examining the applicability of the Value Chain Scoreboard as an alternative disclosure framework for intangible assets. In constructing the disclosure index, both authors examined carefully each of the disclosure items with a summary of the final 28 index items was included for the purpose of this study. Through the disclosure index analysis, they found that emerging market companies do actively engage in voluntary disclosure practice to disseminate mainly quantitative intangible asset information to their global stakeholders.

To date, there is no theory of financial reporting for the preferred guidance of disclosure indices as a measure of quality compliance among the firms worldwide. Most researchers develop, adapt and modify existing indices to meet their own perceived needs as well as their objectives of research. Therefore, it is extremely difficult and complexity to obtain an internationally agreed perception of “best” disclosure index. It is believed that any endeavor to design and develop a universally “best” disclosure index is unlikely to be meaningful unless such an agreement can be established. That is a reason why this kind of study is really interesting to be explored. As a consequence, this study believed that the disclosure index developed is comprehensive enough to understand the compliance level of firms under the requirements of FRS 36 which satisfies most user groups. The data collection and methodology is in the next section.

#### **4. Data collection and methodology**

##### **4.1. Data collection**

The main aim of this study as discussed above is to examine the level of compliance of

accounting standards related to the goodwill impairment regime among the firms listed in SGX. The sample and data used in this paper are obtained primarily from the Worldscope DataStream Database. This study examines the selection of 20 listed firms on the SGX that have released their 2007 annual reports as measured by market capitalization. The year 2007 was chosen in this paper because it is 2 years of beginning of mandatory requirements to disclose the goodwill in their financial statements with expectation that Singaporean firms really understand and disclose it. We start with all Datastream firms with a goodwill balance. Market capitalization is an objective and commonly accepted criterion for size as it is based on the market value of the company (Froidevaux, 2004). The selected firms cover a range of 7 GISC sectors comprising: commerce & diversified; financials; food & beverages; manufacturing; miscellaneous; retailers, textiles & apparel; and utilities & transportation.

Although the number of the sample is small in number, these twenty firms within the sample represent more than 50% of the total market capitalization of the SGX at 2007. Thus, this sample is valuable because the value coverage achieved by concentrating on these leading stocks is high. The final selection of sample for 2007 comprises firms that satisfy all the requirements stated below:

*The first*, prepare annual report according to the Singapore Financial Reporting Standards (FRSs) and Companies Act of Singapore;

*The second*, disclose its accounting policy on goodwill in year 2007;

*The third*, converts non-Singapore dollar

currency into Singapore dollars based on the exchange rate at December of 2007 for the all balance sheet values;

*The last*, all profit and loss and cash flow values – use the average exchange rate over the course of 2007, calculated as the sum of the exchange rates at the end of each month from January to December divided by 12.

Wilmar International Limited and Neptune Orient Lines are only two firms that do not

report in Singapore Dollars. They reported the US Dollar in their annual report. In order to converting the different currencies into the Singapore Dollar, it is based on source information in the website of [www.oanda.com/convert/fxhistory](http://www.oanda.com/convert/fxhistory). Details of the final research sample, value of their goodwill balances and market capitalization are set out in Table 1. The study sample represents 53.64% of total SGX market capitalization as at the conclusion of December 2007.

**Table 1: Overview of Research Sample**

No.	Company Name	Sector	Total Goodwill (\$ million)	Market Capitalization (\$ million)
1	Singapore Telecomm. Ltd	Utilities & Transport.	9,563.50	50,260.83
2	DBS Group Holdings	Financial	5,842.00	31,765.46
3	United Overseas Bank	Financial	4,210.66	31,078.14
4	Oversea-Chinese Banking	Financial	2,669.69	26,887.54
5	Singapore Airlines	Utilities & Transport.	1.30	20,689.61
6	Capitaland Limited	Financial	24.77	20,664.19
7	Keppel Corporation	Miscellaneous	62.39	13,898.69
8	Singapore Tech. Engine. Limited	Utilities & Transport	492.65	9,882.14
9	Great Eastern Holdings	Financial	25.50	9,229.72
10	Sembcorp Industries	Commerce & Diversify	105.33	8,302.93
11	Singapore Press Holding	Financial	13.97	6,908.32
12	Fraser & Neave Limited	Miscellaneous	240.58	6,900.71
13	Flextronics International	Manufacturing	4,666.87	6,691.21
14	Cosco Corporation (S) Limited	Utilities & Transport	9.30	6,396.34
15	Wilmar International Limited	Retailers, Textile & Ap	4,088.91	6,382.66
16	Starhub Limited	Utilities & Transport	220.29	5,282.19
17	Sembcorp Marine Limited	Manufacturing	5.94	5,101.71
18	Genting International P.L.C	Miscellaneous	429.46	4,747.27
19	Olam International Limited	Food & Beverages	76.14	4,632.66
20	Neptune Orient Lines	Utilities & Transport	174.65	4,613.02
	<b>TOTAL</b>		<b>32,923.90</b>	<b>280,315.34</b>

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#### **4.2. Instruments to measure compliance: the Disclosure Index (Weighted Index)**

The purpose of the disclosure index is to produce a rank of disclosure levels among the firms based on the amount of requirements disclosure in their annual reports. The selection of items included in the index was guided by the standard itself (disclosure requirement of FRS 36) with facilitating other authors.

The level of mandatory compliance with FRS 36 was measured by a self-constructed compliance index which is consistent with prior compliance studies (e.g. Kang and Gray (2011); Cheung et al., (2010); Naser and Nuseibah, 2003; Bradbury and Hooks, 2002; Hooke et al., 2002; Wallace and Naser, 1995). The initial step in constructing the index was to develop a checklist. The checklist was based on the requirements of disclosure of FRS 36.

The annual reports of sample firms were reviewed and an assessment of the amount of disclosure recorded on a 0 to 2 scale based on the importance of the disclosure. This approach is believed to present a better measure on the importance of disclosure than a simple binary (0 and 1) score of the firm disclose or non-disclose of an item. Then, a disclosure index was developed and used to capture the mandatory disclosure and compliance level for each firm in the sample. The disclosure index consists of all information that firms have to be disclosed in their annual report.

The disclosure index has been widely employed by previous researchers to measure the extent of disclosure on requirements of accounting standards. This study also applies the disclosure index to measure the compliance level and disclosure quality of Singapore listed firms with the requirements of goodwill impair-

ment. The purpose of developing disclosure index is to produce a ranking among the firms on compliance level and disclosure quality of FRS 36. The procedure to measure the extent of disclosure (i.e. to create disclosure index) is summarized as follows:

##### **(i) Developing of a disclosure-scoring sheet**

The important step in the developing of a disclosure index is the selection of items to be included on a disclosure scoring sheet. As this study concerns the measurement of the firms' level of compliance and disclosure quality with the goodwill impairment requirements, the disclosure scoring sheet was designed on the basis of a review of the requirements of FRS 36. We examine the notes to the accounts of firm's annual report for developing this index. Appendix A provides an example of the disclosures required by FRS 36 from the disclosure scoring sheet protocol established for scoring disclosure items. The scoring sheet was constructed in a way that would permit this study to calculate compliance scores under the weighted method.

To fulfill the objective of this study, there are five importance paragraphs in the FRS 36 that are interested to explore. *Firs*, disclosure requirement under paragraph 134(a) of FRS 136 requires entity to disclose the carrying amount of goodwill allocated to the cash generating units (CGUs) to which goodwill acquired in a business combination is allocated and tested for impairment.

*Second*, Paragraph 80(a) of FRS 136 requires that cash-generating units (CGUs) represent 'the lowest level within the entity at which the goodwill is monitored for internal management purposes. This will tend to lessen the burden in preparing the financial reporting under the new

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regime. However, to avoid against inappropriate aggregation, Paragraph 80(b) of FRS 136 states that the CGU should not be larger than a primary or secondary segment defined for the purpose of segment reporting.<sup>4</sup>

*Third*, Paragraph 90 of FRS 136 requires that cash generating unit to which goodwill has been allocated should be tested for impairment annually, and whenever there is an indication that the goodwill may be impaired, by comparing the carrying amount of the goodwill, with the recoverable amount of the goodwill.

*Forth*, under Paragraph 134 (c) of FRS 136, an entity shall disclose the basis on which the CGUs' recoverable amount has been determined (i.e. value in use or fair value less costs to sell). Fair value less costs to sell is defined as the amount obtainable from the sale of an asset or a CGU in an arm's length transaction between knowledgeable, willing parties less the costs of disposal. That is, market value less selling costs. On the other hand, Paragraph 6 of FRS 136 defines value in use as the present value of the future cash flows expected to be derived from an asset or CGU.

*Fifth*, under Paragraph 134 (d) of FRS 136, states that if the unit's (group of units') recoverable amount is based on value in use, an entity shall disclose the following:

*i. a description of each key assumption on which management has based its cash flow projections for the period covered by the most recent budgets/forecasts. Key assumptions are those to which the unit's (group of units') recoverable amount is most sensitive;*<sup>5</sup>

*ii. a description of management's approach to determining the value(s) assigned to each key assumption, whether those value(s) reflect past*

*experience or, if appropriate, are consistent with external sources of information, and, if not, how and why they differ from past experience or external sources of information;*<sup>6</sup>

*iii. the period over which management has projected cash flows based on financial budgets/forecasts approved by management and, when a period greater than five years is used for a cash-generating unit (group of units), an explanation of why that longer period is justified;*<sup>7</sup>

*iv. the growth rate used to extrapolate cash flow projections beyond the period covered by the most recent budgets/forecasts, and the justification for using any growth rate that exceeds the long-term average growth rate for the products, industries, or country or countries in which the entity operates, or for the market to which the unit (group of units) is dedicated;*<sup>8</sup>

*v. the discount rate(s) applied to the cash flow projections.*<sup>9</sup>

Under paragraph 134 (e), if the unit's (group of units') recoverable amount is based on fair value less costs to sell, an entity shall disclose the methodology used to determine fair value less costs to sell. If fair value less costs to sell is not determined using an observable market price for the unit (group of units), the following information shall also be presented:

*(i) A description of each key assumption on which management has based its determination of fair value less costs to sell. Key assumptions are those to which the unit's (group of units') recoverable amount is most sensitive.*

*(ii) A description of management's approach to determining the value(s) assigned to each key assumption, whether those value(s) reflect past experience or, if appropriate, are consistent*

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*with external sources of information, and, if not, how and why they differ from past experience or external sources of information.*

**(ii). Scoring the disclosure items**

As explained earlier, this study employs the disclosure weighted index as an effective measure of the level of compliance and disclosure quality among the top 20 listed firms in Singapore. Our index identified criteria for 2 level of importance: extremely importance and importance depending on the degree of detail given for each item. Scores (value) were then allocated ranging from 1 (extremely importance) and 2 (importance). If the firm had not disclosed an item that was applicable to the firm, a 0 was recorded. Each disclosure was judged on the basis of whether it was considered to be better or worse than the requirements of FRS 36.

The weights for a particular firm was calculated by adding the integral values assigned to the firm and then dividing the total by number of required disclosed through the FRS 36. A mean (disclosure index) was used to summarize the firms' scores because it gave equal weight to each of the firm.

Thus, it is a starting point to assess the compliance levels and quality of disclosure to which firms defined CGUs and allocate goodwill to them. The investigation process begins by first, comparing each firm's total goodwill balance with the total disclosed CGU goodwill allocation. If the total disclosed goodwill of the firm is less than the total value of goodwill allocated to CGUs, the quality and completeness of disclosure is classified as lower, and vice versa. Thus, firms score full marks of 2 if they successfully disclosed an allocation of goodwill into CGU into their annual report, otherwise it

will mark 0. 1 mark is given for the firm with ostensibly compliant (95% of allocating goodwill to CGU).

The next step is comparing the number of CGUs and business segments for firms in the industry by industry basis. The important aspect in this process is to look at the level of aggregation of CGUs by those firms. As previously discussed, this disclosure requirement is a very importance aspect is impairment testing for firms to solve the inappropriate CGU aggregation issue. We believe that this particular disclosure is extremely importance and therefore, firms will score 2 if their disclosure as required in the standard, and 0 for non-disclose item.

The following step is scoring the disclosure item is score 1 for firms that have been allocated the goodwill to be tested for impairment annually, and whenever there is an indication that the goodwill may be impaired, by comparing the carrying amount of the goodwill, with the recoverable amount of the goodwill and 0 for firms that not tested impairment annually. In addition, the same weighting scoring is also given for firms that disclose method used in estimating the recoverable amount either used value in use or fair value or combination both of them.

Further aspect that needs to be more attentive in assessing the quality of FRS 36 requirement standard is on inspection of key assumptions that the recoverable amount of CGU assets has been estimated. Recoverable amount is defined as the higher of an asset's or a CGU's fair value less cost to sell and its value in use" (FRS 36, para. 6). Fair value less costs to sell is defined as "the amount obtainable from the sale of an asset or CGU in an arm's length transaction between knowledgeable, willing parties, less

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the costs of disposal” while value in use is defined as the present value of the future cash flows expected to be derived from an asset or CGU (FRS 36 para. 6). This involves a selection of fair value or value in use and company is required to disclose which method has been adopted.

As earlier elucidated, the key assumptions used in determining recoverable amounts such as discount rates, growth rates and forecasting period are extremely important for users to understand the operation of goodwill impairment testing regime. Therefore, score of 2 is given to this particular disclosure items compared to other key assumptions in 134 (i) and (ii). In the case where firms do not disclose any of the key assumptions used in determining the recoverable amount, they will score 0.

For the requirements on fair value methods, the scoring of 2 is given if firms use observable market prices to calculate its fair value. However, if the firms did not used observable market prices, an equally score of 1 is given when reporting entity to use its own data and realistic assumption to develop unobservable inputs.

### **(iii). Creation of disclosure index**

The disclosure index is a ratio computed by dividing the total actual score for each firm by the total maximum score that particular firm is expected to earn. However, firms are not penalized for not disclosing the information as required in the standard. The disclosure index score is measured using the equation below:

$$DI = \frac{\text{Firm's total actual score}}{\text{Firm's total maximum score}}$$

### **4.3. Reliability and validity of the Disclosure Index**

Prior research revealed that disclosure index is a useful research tool. However, firm's disclosure level is not easily measured because the development and application of a disclosure index requires subjective assessments by the researcher applying the technique. As a result, it is important to assess the reliability and validity of the resulting measure.

In this study, the initial disclosure checklist was evaluated by the other two authors through a similar approach.<sup>10</sup> This process is important to measure the content validity and reliability of the items in the disclosure checklist which basically needs some evaluation and feedback by a group of experts. The other two authors also make some comments and refine the research instrument (disclosure weighted index) to ensure the reliability and accuracy of the disclosure index.

Therefore, for the purpose of this study, the disclosure requirements regulated in the FRS 36 is assumed to be a “high quality, validity and reliability” disclosure standard since it is based on the standard issued by the IASB through IFRSs after through several intensive process from multi-layer groups of expertise and country of its members. According to Hassan (2004), this assumption is reasonable because of the extensive nature of its disclosure requirements of accounting standards are designed to overcome the lack of guidance with regards to recognition and measurement. Thus, firms have to pay attention and awareness when to report the goodwill impairment in their annual report by ensuring that they disclose all the requirements of the standard.

### **5. Data Analysis**

The degree of compliance and the extent of a firms disclosure will be used as a proxy of quality. With a higher degree of compliance and more disclosure of requirements in the standard it significantly viewed as better quality and provides more information useful to users. This relationship is proven in this section, through the developed disclosure index and its results of the sample.

The important and interesting aspect is the question of the degree of disclosure requirements of FRS 36 among the firms studied. The other question is how really big firms (based on

market capitalization) overcome the complexity of the new requirement standard of impairment testing process. Findings of this important questions are set out in Table 2, clearly illustrated the degree of disclosure as measured through the weighted index (mean scores). The range distribution of firms is demonstrated in Table 3.

In the analysis part, this article will start from the overall results of the firms studied and then identify and comment on the main elements of requirements of FRS 36 at analytical level which differentiate the compliance level among the firms.

**Table 2: Weighted Index for 20 Listed Firms in Singapore**

No.	Name of listed firm	Sector	Weighted Index (%)	Ranking
1	Singapore Telecommunications Limited	Utilities & Transport	71.43	8
2	DBS Group Holdings	Financial	52.63	12
3	United Overseas Bank	Financial	64.29	10
4	Oversea-Chinese Banking	Financial	81.48	6
5	Singapore Airlines	Utilities & Transport	0.00	17
6	Capitaland Limited	Financial	85.71	4
7	Keppel Corporation	Miscellaneous	68.75	9
8	Singapore Technologies Engine Limited	Utilities & Transport	42.86	14
9	Great Eastern Holdings	Financial	100.00	1
10	Sembcorp Industries	Commerce & Diversify	56.52	11
11	Singapore Press Holding	Financial	0.00	17
12	Fraser & Neave Limited	Financial	94.12	3
13	Flextronics International	Manufacturing	21.43	15
14	Cosco Corporation (Singapore) Limited	Utilities & Transport	100.00	1
15	Wilmar International Limited	Retailers	53.33	13
16	Starhub Limited	Utilities & Transport	75.00	7
17	Sembcorp Marine Limited	Manufacturing	18.18	16
18	Genting International P.L.C	Miscellaneous	84.62	5
19	Olam International Limited	Food & Beverages	0.00	17
20	Neptune Orient Lines	Utilities & Transport	0.00	17

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**Table 3: Range of Firm Distribution**

<b>Weighted Index - Range (%)</b>	<b>No. of Firm</b>	<b>%</b>
Between 90 and 100	3	15.00
Between 80 and 89	3	15.00
Between 70 and 79	2	10.00
Between 60 and 69	2	10.00
Between 50 and 59	3	15.00
Less than 50	7	35.00
<b>Total</b>	<b>20</b>	<b>100.00</b>

As can be seen in Table 2, there are different levels of compliance with the requirements of FRS 36 among the top 20 listed firms in SGX for 2007. Two firms which are Great Eastern Holdings (financial) and Cosco Corporation (utilities and transportation) fully complied with the disclosure requirements under FRS 36. It means that those firms really disclosed all the information required in their annual reports which are easy for user groups to access the firm's performance. In other words, the management for those firms is transparent and fair in providing detailed information at each level of their operations. For example, the details description on key assumptions employed in estimating the recoverable amount is clearly stated at each CGU level which represents the operation of the firms.

In comparison, four firms (Singapore Airlines, Singapore Press Holdings, Olam International Limited and Neptune Orient Lines) did not comply with any requirements of the standard. Although they have stated goodwill balance in their statements of financial position, a detail on impairment testing process are not provided in any paragraph of their notes to the account. Therefore, the rate

of compliance with the provisions of FRS 36 for those firms was viewed to be very poor. The results from those firms give a good signal that the requirements of the standard are not easy to be adopted by the big sample firms in Singapore. The management for those firms refused to have disclosure of transparency and information usefulness in the impairment testing process that will benefit group users in future investment decision.

An examining the analytical results relating to each firm for identification of the nine requirements (if used value in use method) or five requirements (if adopted fair value method –observable market price) or six requirements (if employed fair value method – did not use observable market price) used in this study. The first general gap between the compliance levels among the firms is related to allocation of goodwill into CGU. The goodwill allocation is the difficult and complex process in the impairment testing. Most of the studied firms who do not fully comply with this requirement failed to give meaningful information related to basic allocation of goodwill into CGU.

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For example, 13 out of 20 firms (65%) failed to fulfill the requirement of the standard in paragraph 80 (b) which stated that the CGU or group of CGUs should not be larger than a primary or secondary segment defined for the purpose of segment reporting. In addition, 7 out of 20 firms (35%) did not allocate the goodwill into their CGUs. The results for the whole sample corresponded from the previous study by Carlin et al., (2008); Wines et al., (2007); Lonergan (2007); Carlin et al., (2007); and Cearns (1999) where they detected that the requirement of standard on allocation of goodwill is very difficult to implement.

The second general gap that was interesting to investigate is on the assumptions used in determining the recoverable amount especially when firms used value in the methods. As discussed earlier, there are three key assumptions which are (i) discount rate (ii) growth rate and (iii) period for projected cash flow play important roles in estimating the recoverable amount of CGUs. These factors have a positive relationship in influencing the discounted cash flow model in valuing a firm's performance. Most of the firms especially firms with multiple numbers of CGUs failed to provide enough information related to these key assumptions. As a result, it created a high degree of difficulty for financial report users to assess the current as well as potential performances of those firms.

In some instances, for example, DBS Group Holdings (financial) which reported goodwill have been allocated into four CGUs. Surprisingly, the management of this firm has failed to provide any meaningful information related to key assumptions employed in measuring two recoverable amounts of its CGUs.

Therefore, this firm is ranked in 12 out of 20 firms based on the calculation of weighted disclosure index. It is also occurred to Flextronics International and Sembcorp Marine Limited (both in manufacturing sector) which are ranked in 15 and 16 respectively. Although they stated to use value in use in determining the recoverable amount, the details of requirement of this particular item is not provided in their annual report which further questioned the level of compliance and disclosure quality among the firms that claimed successful adopted FRS.

Other examples show that three main key assumption affects the ranks of the firms studied. Singapore Technologies Engineering Limited (15 CGUs) and Sembcorp Industries (5 CGUs). Those firms are ranked in 14 and 11 with the weighted disclosure index in the range between 43% and 57%. This situation occurs because management of these firms failed to disclose the growth rate and forecast period for all of their CGUs which we believed a key importance factors that have a huge impact in discounted cash flow modeling.

Based on the pattern results of the study, we acknowledged that the requirements of FRS 36 is highly complex and problematic for firms to implement. For these reasons we believe there is plenty of scope for improvement in this area in order to make the standard related to the goodwill impairment testing useful for all external users, first and foremost the investors and also for accounting standards setters.

## **6. Conclusions and recommendations**

A number of previous studies over the years have made use of a disclosure index as a research tool. One test of the usefulness of a research tool is the extent to which it is used.

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In this case it has persisted over time, from the 1960s to the present, and has been employed by many different researchers. A research tool will not continue to be used if it produces poor results. The disclosure index has provided researchers with the expected answers to their research objectives in many cases. If firm information disclosure continues as a focus of research it is likely that the disclosure index will continue to be applied.

This study sets out to offer proof of several important questions relating to the quality of information disclosed on goodwill impairment process under the new requirements of FRS 36. This study investigated the disclosure compliance level of the new requirement of FRS 36 by top 20 of Singaporean listed firms in SGX for the financial year 2007. The results revealed that the compliance level on the disclosure requirements of FRS 36 is poor and that the real situations in Singapore jurisdiction where we expect the compliance level and disclosure quality are high.

Furthermore, the finding suggests that at least some of the firms in the sample failed to completely comply with the reporting requirements of FRS 36. This deficiency may result in a decreased ability of external analysts to completely self-assess a firm's performance. Other factors contribute to failure in complying with the new standards was lack of experience since the new FRS 36 introduced a very high degree of complexity and details. However, there is a hope that this circumstance will improve over time.

The results revealed in this study offer the group users further insight into the systematic compliance and disclosure quality bearing on the new standard as required in the goodwill

impairment testing regime. However, it is clear from the present study, several critical issues should focus especially an identification and valuation of CGUs, and the numerous assumptions to be made in estimating the CGUs recoverable amount. These two issues remain to be considered in developing a more complete understanding of the causes that some firms failed in complying with the new goodwill reporting regime.

Our results should also be of interest to practitioners in the area of accounting standard setting and regulation, as we argue that the adoption of new requirements of goodwill impairment testing, unaccompanied by full compliance of the disclosure requirements, limits the effectiveness of the standard. The issue of compliance continues to be a contentious issue, for instance, indicating that rigorous interpretation and application of the standard.

The limitation of the current study is because the analyzed and results reported here are based on observations for firms in small numbers for one year. Hence, the results may not be generalized for overall firms listed in SGX and/or time period. This issue could be addressed in future research by applying the same technique to bigger number firms or longitudinal time period of study.

Finally, it is also important to note that, the accounting related to goodwill especially in allocation of CGUs and key assumptions adopted in estimating the recoverable amount of CGUs need to be examined from time to time, to see if any new issues of goodwill have emerged and also to revise the standard to become more reliable and follow the current accounting needs.

## Appendix A: Disclosure Index and Weightings

Contents	References	Score
An entity shall disclose the carrying amount of goodwill allocated to the unit (group of units)	Para 134 (a)	2
Cash-generating units represent ‘the lowest level within the entity at which the goodwill is monitored for internal management purpose and that the CGU should not be larger than a primary or secondary segment defined for the purpose of segment reporting	Para 80 (a) (b)	2
Cash generating unit to which goodwill has been allocated shall be tested for impairment annually, and whenever there is an indication that the goodwill may be impaired, by comparing the carrying amount of the goodwill, with the recoverable amount of the goodwill	Para 90	1
An entity shall disclose the basis on which the unit’s (group of units’) recoverable amount has been determined (ie value in use or fair value less costs to sell).	Para 134 (c)	1
A description of each key assumption on which management has based its cash flow projections for the period covered by the most recent budgets/forecasts. Key assumptions are those to which the unit’s (group of units’) recoverable amount is most sensitive.	Para 134 (d)(i)	1
A description of management’s approach to determining the value(s) assigned to each key assumption, whether those value(s) reflect past experience or, if appropriate, are consistent with external sources of information, and, if not, how and why they differ from past experience or external sources of information	Para 134 (d)(ii)	1
The period over which management has projected cash flows based on financial budgets/forecasts approved by management and, when a period greater than five years is used for a cash-generating unit (group of units), an explanation of why that longer period is justified	Para 134 (d)(iii)	1
The growth rate used to extrapolate cash flow projections beyond the period covered by the most recent budgets/forecasts, and the justification for using any growth rate that exceeds the long-term average growth rate for the products, industries, or country or countries in which the entity operates, or for the market to which the unit (group of units) is dedicated.	Para 134 (d)(iv)	2
The discount rate(s) applied to the cash flow projections	Para 134 (d)(v)	2
If the unit’s (group of units’) recoverable amount is based on fair value less costs to sell, an entity shall disclose the methodology used to determine fair value less costs to sell.	Para 134 (e)	2
A description of each key assumption on which management has based its determination of fair value less costs to sell. Key assumptions are those to which the unit’s (group of units’) recoverable amount is most sensitive.	Para 134 (e)(i)	2
A description of management’s approach to determining the value(s) assigned to each key assumption, whether those value(s) reflect past experience or, if appropriate, are consistent with external sources of information, and, if not, how and why they differ from past experience or external sources of information	Para 134 (e)(ii)	1

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## Notes:

1. See [www.asc.gov.sg/frs/index.htm](http://www.asc.gov.sg/frs/index.htm)
2. See also Dagwell et al., 2004
3. See also Marston and Shrikes (1991) for a review of study that has measured disclosure by a non-index method.
4. Pursuant to FRS 14 Segment Reporting
5. FRS 36, Paragraph 134 d (i)
6. FRS 36, Paragraph 134 d (ii)
7. FRS 36, Paragraph 134 d (iii)
8. FRS 36, Paragraph 134 d (iv)
9. FRS 36, Paragraph 134 d (v)
10. See also approach by Tsalavoutas et al., (2009), Camfferman and Cooke (2002), and Cooke (1992).

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