An Empirical Investigation of Compliance and Disclosure Quality Under FRS36 For Singaporean Listed Firms

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Abstract: Drawing on data from a sample of 168 firms listed on the Singapore Stock Exchange (SGX) over three consecutive years (2005, 2006 and 2007), this study focuses on the issue of IFRS compliance and disclosure quality. Using the requirements of FRS 36 in relation to goodwill impairment testing as the particular focal point for the analysis, the results of this study demonstrate poor levels of compliance and transparency on the part of SGX listed firms with goodwill in relation to their goodwill impairment testing processes and assumptions. This study adds to the literature by providing insights into this phenomenon from the standpoint of an advanced Asia Pacific region jurisdiction not previously subjected to scrutiny on the dimensions drawn upon for the purposes of this study and through the use of a multi-year research design. The results complement and reinforce the significance of earlier research conducted in relation to the focal phenomenon in Australia, Malaysia and New Zealand and suggest the existence of persistent cross-border difficulties with the implementation of the complex technical provisions of the IFRS goodwill impairment testing regime.

Keywords: Goodwill, Impairment, Financial reporting, Singapore

I. Introduction

Goodwill has been widely acknowledged as a complex phenomenon. It has been described as a thing easy to describe but very difficult to define.[1] Commensurate with this, at times, heated debates in relation to goodwill and goodwill accounting have occurred in many jurisdictions throughout the world. Irrespective of the differences of thought evident in these arguments, substantial homogenisation of fundamental goodwill accounting practice has emerged across the globe over the past decade. For example, both US GAAP and IFRS have dispensed with the long tradition of periodic amortisation of goodwill against earnings and instead substituted a process of periodic impairment testing.

Proponents of this approach have argued strongly that the retirement of the amortisation approach to goodwill accounting and its replacement with an impairment testing led system have delivered an enhanced capacity for financial statements to reflect and signal the underlying economic position of reporting entities [20]. Consistent with this approach, Harper [11] noted that the implementation of annual impairment testing as required under an impairment based regime for goodwill reporting offers a clearer picture to financial reporting user. Similarly, Wyatt [22] argues that the changed reporting arrangements are likely beneficial to financial reporting because better judgment in goodwill valuation is required.

In contrast to the optimistic expectations for the impact of the amortisation approach set out above, concerns have been raised in the research literature in relation to the impact of the approach. Arguably, the shift from amortization to periodic reviews puts a new and continuous responsibility on management to determine the value of goodwill. In turn, this represents a new burden on auditors, regulatory bodies, and investors in their efforts to evaluate management decisions and determinations [12].

The literature has thrown up a series of other concerns in relation to the efficacy and impact of impairment testing based regimes for goodwill. These include a lack of evidence that earnings numbers derived from the regime are more value relevant than those generated under the previous capitalize and amortize approach [8]; evidence that write off timing is consistent with managerial opportunism [1]; evidence of undue delays in recognizing impairment losses [13] [12] [18] and evidence of gaming in the manner in which goodwill is allocated between reporting units in a bid to minimize the chance of forced impairment losses [23]. Arguably, impairment based approaches have the capacity to be disruptive to both the process of financial statement preparation and interpretation [17].

In approaching the topic of goodwill reporting, the main contribution of this paper is to add to the developing literature on compliance with aspects of the impairment reporting regime. Much extant literature on impairment accounting specifically and financial reporting more generally appears to be predicated on the assumption that in producing their financial statements, firms exhibit strong compliance with the requirements of financial reporting rules. By contrast, a series of recent studies[2] have brought the credibility of this assumption into question. This has implications for researchers interested in financial reporting,[3] analysts, auditors, litigators, policy makers and regulators alike. Unlike earlier contributions on this theme, this paper concentrates on the situation in Singapore, an advanced and economically significant economy and capital market in the heart of Asia, with a highly skilled professional workforce

and strong institutional and financial infrastructure to support quality financial reporting.

In pursuit of this goal, the remainder of the present paper is organized as follows. The next section describes the overview of key developments in the regulation of goodwill accounting and reporting in Singapore. This is followed in Section 3 with a brief review of the research sample and methodology used for the purpose of this study. A discussion of the key results is provided in Section 4. Finally, Section 5 offers conclusions and suggests possible implications of this study for potential further research.

II. Overview of Goodwill Reporting Arrangements in Singapore

The reporting framework in Singapore that deals with the disclosure of goodwill accounting is prescribed through the combined effects of the new internationalized Singaporean financial reporting standards in FRS 103 *Business Combinations,* FRS 38 *Intangible Assets,* and FRS 36 *Impairment of Asset.*[4] These standards should be applied on acquisition to goodwill purchased in business combinations. These standards were released by the ASC[5] with the stated objective of improving the information content of goodwill reporting in Singapore.

In Singapore, the professional accounting body that deals in accounting standards is the Institute of Certified Public Accountants of Singapore (ICPAS), hereinafter referred to as the Institute. The Institute,
a member of the IASC, traditionally played a leading role in the development of accounting standards for use in Singapore. However, in August 2002, the Singapore government created the Council on Corporate Disclosure and Governance (CCDG) to replace the ICPAS as the accounting setter for all companies incorporated in Singapore and to review and recommend corporate governance and disclosure practices on a continuing basis. With the enactment of the Accounting Standards Act, passed in Parliament on 27 August 2007 and the dissolution of the CCDG, the Accounting Standards Council (ASC) took over the task of prescribing accounting standards from the CCDG.

Historically, the accounting of goodwill in Singapore has largely been based on the IAS standards. IAS 22 *Business Combinations* was adopted and issued as SAS 22 without any notable non-conforming items as at 31 December 1986. In SAS 22, paragraph 41, goodwill was defined as *"...any excess of the cost of acquisition over the fair values of the net identifiable assets acquired...".* In addition, paragraph 20 stated that *"those who recognize goodwill arising on acquisition as an asset in the consolidated financial statements believe that it represents a payment made in anticipation of future income".*

SAS 22 required the recognition of purchased goodwill in the accounts so long as it was supported by future income (paragraph 41). Internally generated goodwill was not explicitly excluded from recognition, although paragraph 22 argues against the non-amortization of goodwill on the basis that this treatment implicitly recognises goodwill developed subsequent to acquisition. Goodwill was to be calculated by reference to the fair value of the consideration given. Essentially, SAS 22 embodied what might be termed a classic capitalise and amortise regime for goodwill accounting and reporting.

This state of affairs changed with the promulgation of accounting standard FRS 36 in Singapore, effective from 1 July 2004. Under FRS 36, goodwill is not amortized any longer and it is considered to be an asset with indefinite life. It however has to be subjected to a stringent impairment test, either annually, or at shorter notice if the need arises, to assess erosion in value. In the event of impairment, the income statement is charged with the computed impairment loss to ensure the immediate highlighting of poorly performing business units. Goodwill is thus not seen as a steadily wasting asset but one with indefinite life and with a value linked to the performance of the unit or units within the organisation to which it relates.

Another significant change in the treatment of goodwill has arisen out of the requirement for treating all business combinations as purchases (FRS 103). This will eliminate the possibility of firms' not recording goodwill by pooling the assets and liabilities of various firms together for preparation of financial statements. Thus, management now has to explain what the goodwill amount represents. Each of these new requirements poses a series of challenges to many entities considering acquisitions.

The test for impairment of goodwill under the FRS is carried out at the level of the cash generating unit (CGU) or a group of CGUs which represent the lowest level at which management monitor goodwill. FRS 36 also stipulates that the level for assessing impairment must never be higher than a business or a geographical segment. This kind of requirement has been criticized because it is argued to leave significant room for management interpretation, judgment and bias [16].

The test 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 lesser 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 CGU based impairment testing process is complex and in light of this, FRS 36 requires detailed disclosures to be published regarding the nature of annual impairment tests. These

disclosures include information relating to the assumptions made for the purposes of the impairment tests, and the sensitivity of the results of the impairment tests to changes in these assumptions. These disclosures are presumably intended to give users more information about the acquisitions, the likely benefit to the acquiring firm and the effectiveness and reasonableness of periodic impairment reviews.

In order to have a better understanding of the characteristics of the goodwill reporting regime under FRS 36, developing an understanding of the level of compliance and quality disclosures related to the important requirements of this Standard is a matter of substantial significance. In the presence of high complexity, deviations from required practice have the potential to materially and rapidly diminish information quality, hence the focus on compliance in this study. Section 3 below sets out details of the data drawn upon and methodology employed for the purposes of investigating this issue.

III.   Data and Methodology

This study covers the first three years of reporting pursuant to FRS 36 in Singapore. The Worldscope DataStream database was used to identify population of firms listed on the Singapore Stock Exchange (SGX) in each of 2005, 2006 and 2007.[6] From these, 168 firms which were listed across the entire period of interest and which had goodwill in each of the three years the subject of investigation were identified. These firms constituted the final sample for the purposes of this research. These firms represented approximately 70% of the total market capitalisation of the SGX across the period studied.

At the date of sampling, the 168 firms included in the final sample controlled assets valued at $708,453, $781,494 and $886,975 million, which included total goodwill of $27,018, $34,234 and $33,763 million for 2005, 2006 and 2007 respectively. Table 1 below sets out basic descriptive data relating to the research sample for the years investigated.

Following earlier research[7] on the compliance issue in other jurisdictions, two key groups of compliance related issues are subject to investigation for the purposes of this paper. The first relates to the role of CGUs as key devices determining the shape and impact of the impairment testing process. The second relates to inspection of key assumptions based upon which the recoverable amount of CGU assets has been estimated. Therefore, a dual layered comparative/evaluative methodology is employed. This first requires a comparison to be made between the content of a firm's impairment testing disclosure with a checklist of requirements derived from the text of FRS 36. Through this comparison, firm disclosures are categorized according to a bi-modal "comply" or "non-comply" taxonomy.

The second layer of the methodology looks beyond distribution of disclosures into the basic categories of "comply" and "non-comply" and recognizes that within the "comply" an additional element of the methodology employed is the construction of multi-category disclosure quality taxonomies which provide a more nuanced perspective on disclosure practice than a binomial "comply" versus "non-comply" categorization.

Referring to the role of CGUs, paragraph 80 of FRS 36 requires that for the purpose of impairment testing, goodwill is to be allocated to each of the reporting entity's CGUs (or groups of CGUs) expected to benefit from the goodwill. To avoid the creation of an excessive reporting systems burden, this allocation is only required down to CGUs or groups of CGUs which represent the lowest level at which goodwill is monitored for internal management purposes.

However, to guard against inappropriate aggregation,[8] paragraph 80 stipulates that the CGUs (or groups thereof) should not be larger than segments defined for the purpose of segment reporting. [9]

This is important because the allocation of goodwill to CGUs is a crucial process as the number of CGUs to which goodwill is allocated has the capacity to impact an impairment loss being recognised. The risk relating to allocation of goodwill to CGU's is known as the CGU aggregation problem [2] [5] [3], where too few CGUs are defined in the process of allocation of goodwill to CGUs. Inappropriate 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 degrees of risk.

Therefore, in coming to a better understanding of the characteristics of the goodwill reporting regime, developing an image of the apparent level of "aggregation" of CGUs as defined by reporting entities is of prime significance.[10] This is pursued by comparing the number of reported controlled subsidiary entities, business segments and defined CGUs for each firm of the studied sample.

Thus, it is a starting point to assess the compliance dimensions in relation to which firms defined CGUs and allocated 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.
The next step is comparing the number of CGUs and business segments for firms on the industry by industry basis. The important aspect in this process is to look at the level of aggregation of CGUs by those firms. This data assists with

the development of insight into the level of compliance with basic disclosure requirement set out in FRS 36.

Lastly, comparing the average number of reported controlled subsidiary entities, business segments and defined CGUs for each firm in the sample, allowing a CGU to business segment ratio to be calculated for each of the sample firms. This analysis builds upon the procedure described in step two (above) and also goes to the likelihood of CGU aggregation behaviour among reporting entities.

Table 1 – Overview of Research Sample

Sector	Total Goodwill (SGDS Million)			Average Value of Goodwill (SGDS Million)			Goodwill as % of Total Assets			% Δ in Goodwill	
	2005	2006	2007	2005	2006	2007	2005	2006	2007	2006	2007
Commerce & Diversified (n=9)	229	219	314	25	24	35	1.8%	1.4%	1.7%	-4.5%	+43.6%
Construction (n=17)	407	373	305	24	22	18	5.2%	3.6%	2.8%	-8.4%	-18.2%
Drugs, Cosmetics, Healthcare & Chemicals (n=8)	35	39	68	4	5	9	2.4%	2.5%	3.4%	+10.1%	+74.6%
Electrical & Electronic (n=22)	242	813	871	11	37	40	3.0%	8.9%	9.0%	+235.4%	+7.1%
Financials (n=13)	7,743	13,273	13,154	596	1,021	1,012	1.4%	2.2%	1.9%	+71.4+	-0.9%
Food & Beverages (n=8)	89	87	94	11	11	12	5.0%	3.7%	3.9%	-2.5%	+7.9%
Machinery & Equipment (n=14)	310	241	278	22	17	20	14.2%	10.9%	11.2%	-22.4%	+15.4%
Manufacturing (n=18)	5,627	4,418	4,850	313	245	269	24.2%	15.4%	17.9%	-21.5%	+9.8%
Metal Product Manufacturers (n=13)	136	148	146	10	11	11	2.3%	2.9%	2.1%	+9.0%	-2.0%
Miscellaneous (n=17)	1,114	3,313	2,367	66	195	139	6.6%	17.0%	9.5%	+197.5%	-28.6%
Retailers, Textiles & Apparel (n=10)	429	629	628	43	63	63	15.0%	18.1%	16.0%	+46.8%	-0.1%
Utilities & Transportation (n=19)	10,656	10,681	10,690	561	562	563	12.4%	12.9%	12.1%	+0.2%	+0.1%
TOTAL (n=168)	27,018	34,234	33,763	161	204	201	3.8%	4.4%	3.8%	+26.7%	-1.4%

Having examined the aggregation issue, a further aspect that needs to be more attention in assessing the quality of the requirements of goodwill accounting 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 costs 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 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 firms are required to disclosure which method has been adopted.

FRS 36 stipulates[11] that adoption of a fair value method in the determination of recoverable amount is not dependent on the existence of an active market for the assets in question, but also makes clear the need for some reasonable basis for making a reliable estimate of the amount obtainable from the disposal of assets in arm's length transactions between knowledgeable and willing parties as a prerequisite to the adoption of this method. Jarva [14] argued that the fair value standards allow the reporting entity to use its own data and realistic assumption to develop unobservable inputs, if observable prices from an active market are not available. Carlin *et al.* [5] point out that the disclosure requirements for those firms using the fair value method as a basis for determining the recoverable amount of CGUs are limited compared to those required in instances where the value in use approach is adopted. Consequently, the circumstances in which this choice is exercised also represents an object of research interest, and the frequency with which sample firms resorted to either method is reported in next section of this study.

On the other hand, the disclosure requirement for firms adopting value in use should result in more useful information for financial statements user groups because of the far more detailed disclosures associated with the use of this approach. These disclosures are required to include;

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;[12]

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;[13]

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; [14]

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;[15]

v. the discount rate(s) applied to the cash flow projections.[16]

The key assumptions such as discount rates, growth rates, forecast periods and terminal value periods are scrutinised in order to yield a greater understanding of the operation of goodwill reporting regime. The disclosure pertaining to discount rates and growth rates made by firms in the sample is reported in section 4.

Since this main objective of the study is to examine and assess the quality of disclosures in relation to goodwill impairment requirements, the analysis of the key assumptions used to estimate the recoverable amount, this study draws upon the same approach as applied in previous studies by Carlin & Finch [2] and Carlin *et al.* [5]. In order to assess the quality of disclosure, it was necessary to develop taxonomy for both discount rates and growth rates based disclosure. For the discount rate disclosures, the taxonomy applied for discount rates required each firm in the sample to allocate one of four elements i.e. 'multiple explicit discount rates', 'single explicit discount rates', and 'range of discount rate', and 'no effective disclosure'.

Allocation of a firm in the first category signified that the firm fully complied with the requirements of FRS 36 in relation to discount rate that used in estimating the recoverable amount of CGU. Firms in this category disclosed the details of the specific discount rates used to discount cashflows for the purpose of impairment testing for each of the CGU, and used varying discount rates which reflect the risk characteristics of each CGU.

Firms in the second category i.e. 'single explicit discount rate' indicated that the firms disclose a single discount for each of the CGU. In this scenario, firms use the same discount rate for each CGU even though risk levels may arguably differ between CGUs within the same economic entity. In assessing the level quality of compliance and disclosure, firms in this category are classified as exhibiting lower disclosure quality than those in the first category.

In the third category i.e. 'range of discount rates' firms still provided information in general terms about a range of

discount rates used across their portfolio of CGUs, without specifying the rate applicable to any CGU in particular. This practice is questionable in terms of fulfilling the requirements of FRS 36 and as a result, the quality of disclosure for this category is classified as lower than the two above categories.

Finally, firms in fourth category i.e. 'no effective disclosure' provided insufficient disclosure no valuable information for external user groups relating to discount rates used in the impairment testing process. Therefore, firms in this category totally breached the requirements of FRS 36 and it can be concluded that the quality of disclosure of these firms is poor.

Relating to assumed growth rate disclosures as required under FRS 36, the same methodology was employed. Firms in the research sample are allocated to four categories depending on the explicitness and comprehensiveness of their information disclosures i.e. 'multiple explicit growth rates', 'single explicit growth rate', 'range of growth rates' and 'no effective disclosure'. The results of the analysis of this study are reported in Section 4, below.

IV.   Results and Discussion

In investigating compliance and disclosure quality in relation to FRS 36, as defined above, a threshold question of interest was the degree to which the total reported value of each sample firm's goodwill could be allocated to the sum of goodwill value discloses as having been allocated to the

firm's defined CGUs. The annual reports of the studied firms revealed two different clusters of practice.

Table 2 below shows that firms in the sample were categorized as fully compliant or non-compliant with the disclosure requirements under FRS 36. The first and dominant cluster comprised 95, 120 and 125 firms which were fully compliant with this threshold disclosure requirement for 2005, 2006 and 2007 respectively. These firms allocated the total amount of goodwill to CGUs in an explicit and transparent manner, as required. In 2007 and 2006 in comparison to 2005, the rate of compliance among the Singapore listed firms increased from 56.55% in 2005 to 71.43% (2006) and 74.40% (2007), conclusively indicating improvements in the rate of compliance with this requirement over the period of the study.

The second cluster comprised 73, 48 and 43 firms where it was not possible in any meaningful way to draw a link between the value of reported goodwill and any the firm's defined CGUs. In other words, these firms failed to comply with the basic disclosure requirement in FRS 36 requiring reconciliation between balance sheet total goodwill and the amount of goodwill disclosed as having been allocated to CGUs. The number of firms in second cluster was surprisingly high; comprising approximately at 43.45% (2005), 28.57% (2006) and 25.59% (2007). This result is consistent with the types of concerns raised by Wines *et al.* [21], Dagwell *et al.* [9], and Cearns [7] where the allocation of goodwill to CGU or group of CGUs is a crucial process in impairment   testing.

Table 2 – CGU Allocation Compliance by Sector

Sector	Fully Compliant (number of firms			Non-Compliant (number of firms)		
	2005	2006	2007	2005	2006	2007
Commerce & Diversified (n=9)	5	7	6	4	2	3
Construction (n=17)	8	11	12	9	6	5
Drugs, Cosmetics, Healthcare & Chemicals (n=8)	5	4	3	3	4	5
Electrical & Electronic (n=22)	14	16	15	8	6	7
Financials (n=13)	10	10	10	3	3	3
Food & Beverages (n=8)	5	5	5	3	3	3
Machinery & Equipment (n=14)	6	9	11	8	5	3
Manufacturing (n=18)	11	14	13	7	4	5
Metal Product Manufacturers (n=13)	7	9	11	6	4	2
Miscellaneous (n=17)	9	11	15	8	6	2
Retailers, Textiles & Apparel (n=10)	5	8	8	5	2	2
Utilities & Transportation (n=19)	10	16	16	9	3	3
TOTAL (n=168)	**95**	**120**	**125**	**73**	**48**	**43**

The data shows a substantial standard breach rate among the Singaporean firms studied. Users of the financial reports produced by these firms are likely to face a high degree of difficulty in undertaking independent evaluations of the robustness of valuations ascribed to goodwill by those firms.

An obvious problem which arises where basic goodwill to CGU allocation information is not provided is the lack of capacity on the part of the user groups to better understanding how goodwill is distributed across a business, where it is concentrated and what types of underlying business activities it is principally associated with. This results in a diminished capacity on the part of user groups to develop detailed understandings of the firms reporting on impairment risk profiles.

A further analysis of firms' compliance level undertaken for the purposes of this study is the examination of the problem of aggregation of goodwill at the CGU level. The allocation of goodwill to CGUs or groups of CGUs is a crucial process as it affects the likelihood of impairment charges being recognised. According to paragraph 80 of FRS 36, a CGU or group of CGUs to which goodwill is allocated for the purpose of impairment testing represents the lowest level within the entity at which goodwill is monitored for internal management purposes. However, the CGUs defined are not to be larger than segments as reported on by the entity pursuant to FRS 14 Segment Reporting.

In order to provide a clearer picture of current practice among the Singapore listed firms studied in relation to the CGU aggregation issue, data pertaining to the number of entities controlled by each of the firms, the number of business segments those firms reported and the number of CGUs defined by each of the firms in the sample is analysed. Given the admonitions in FRS 36 in relation to the size of CGUs relative to defined business segments, the relationship between the aggregate levels of CGUs and segments defined by sample firms is a matter of particular interest. In essence, the intuition behind this approach is that over a sufficiently large sample, the aggregate number of defined segments should set a baseline for the expected aggregate number of CGUs. Material deviation below this expectation could suggest the presence of a CGU aggregation problem.17

Table 3 contains data which bears on this issue. As is evident on inspection of the table, of the 168 firms in the sample which provided sufficient disclosures to permit identification of their CGUs for 2005, 2006 and 2007, only 10.12% (2005), 14.88% (2006) and 16.07% (2007) of the firms in the sample defined more CGUs than business segments, while a further 8.93% (2005), 11.31% (2006) and 16.67% (2007) defined as many CGUs as business segments.

The results also reveal the existence of a high proportion of firms which disclosed fewer CGUs than business segments (approximately half the sample firms in each year) and a substantial (though falling) proportion of firms which provided no effective disclosure at all in relation to CGUs. The high number of firms which defined fewer CGUs than segments suggests that amongst the total research sample, there likely exist examples of organisations where the low CGU definition rates were driven by factors other than a narrow incidence of goodwill throughout the firm.

Further, these results are consistent with the findings of earlier research in relation to Australian and Malaysian firms [3] [6]. In turn, this consistency sheds new light and complexion on those earlier published studies. The Singapore results show that substantial deviation from required reporting practice was not an idiosyncratic characteristic of a single jurisdiction. Rather, the consistency apparent in the results now available for three jurisdictions suggests the existence of a systematic pattern.

Table 4 contains further data which bears on the CGU aggregation issue, through calculation of the CGU to business segment ratio for the sample. Whilst built using the same underlying data as used to generate Table 3, the advantage of the ratio based analysis set out in Table 4 is that it facilitates a whole of sample (and industry segment by industry segment) overview of the quantitative relationships between segment frequency counts and CGU frequency counts.

The interpretation of this data is based on the intuition that CGU to segment ratios materially less than one suggest the existence of a heightened risk of aggregation problems, given the expectation raised in FRS 36 that CGUs be no larger than defined business segments. The results set out in Table 4 suggest that there is reason for concern that this has been a problem in the Singaporean context, since for the sample as a whole, sample firms only defined 0.37, 0.54 and 0.61 CGUs for each business segment in 2005, 2006 and 2007 respectively.18

The issue of CGU aggregation is not the only key choice preparers wield with consequences for reporting transparency. The next issue of consequence in relation to for goodwill impairment testing disclosure relates to the choice of method employed in estimating the recoverable amount of CGU assets and determining whether goodwill impairment has occurred. As discussed above, firms have the choice to adopt either a value in use or a fair value approach when estimating CGU recoverable amount. Table 5 sets out the frequency of firms' choice of method in estimating the recoverable amount of CGUs.

The first striking issue revealed by this data is the frequency with which firms with goodwill made no statements whatsoever in relation to their choice of recoverable amount estimation technique. The data reveals that 56, 26 and 21 out of 168 firms did not disclose the method used in determining

the recoverable amount19 for CGU in 2005, 2006 and 2007 respectively. In contrast, the main approach used as a basis for the estimation of recoverable amount was the value in use method, used by 100 (2005), 123 (2006) and 131 (2007). The dominance of the value in use approach is consistent with research findings in relation to preferred value estimation method in other jurisdictions, including Australia and Malaysia. In this vein, it is notable that serious objections have recently emerged in the technical accounting literature in relation to the rigour and workability of value in use as a recoverable amount estimation technique and the motivation underpinning dominant firm preference for this technique [15].

One of the consequences of the decision to adopt value in use as a basis for recoverable amount estimation is the requirement that firms provide detailed disclosures in relation to the discount rates, growth rates and the time horizons assumed as elements of the discounted cashflow modelling approach which supports the generation of value in use estimates. Each of these matters has the capacity to materially influence the outcome of the value estimation process.

In relation to discount rates, where firms adopt value in use as their method in impairment testing process, Paragraph 134 (d) of FRS 36 requires disclosures relating to discount rates applied to the cash flow projections and specifies that these discount rates shall be stated on a pre-tax basis. Discount rate disclosures are important for firms in process of modelling the CGU asset portfolio recoverable amount. This means that the discount rates employed should not reflect firm financing structure decisions and at the same time be able to show variation across CGUs where business risk differs. The information related to the discount rates is of material significance to financial statement users seeking to independently evaluate the impairment testing process applied by a firm. The variation in discount rate disclosures of the Singapore listed firms for 2005, 2006 and 2007 are details in Table 6.

Table 3 Business Segments and CGU Aggregation by Sector

Sector	No. CGUs > Segments			No. CGUs = Segments			No. CGUs < Segments			No Effective Disclosure		
	2005	2006	2007	2005	2006	2007	2005	2006	2007	2005	2006	2007
Commerce & Diversified (n=9)	1	3	2	1	0	1	4	5	5	3	1	1
Construction (n=17)	2	3	2	1	4	6	5	6	6	9	4	3
Drugs, Cosmetics, Healthcare & Chemicals (n=8)	2	2	1	1	1	1	3	2	3	2	3	3
Electrical & Electronic (n=22)	2	4	4	3	1	4	9	11	7	8	6	7
Financials (n=13)	1	2	2	1	2	2	9	6	6	2	3	3
Food & Beverages (n=8)	1	0	2	2	2	2	3	4	3	2	2	1
Machinery & Equipment (n=14)	1	1	1	1	1	1	4	8	10	8	4	2
Manufacturing (n=18)	2	1	2	1	3	4	9	11	10	6	3	2
Metal Product Manufacturers (n=13)	0	0	0	1	3	3	6	8	9	6	2	1
Miscellaneous (n=17)	1	2	3	0	0	2	9	9	11	7	6	1
Retailers, Textiles & Apparel (n=10)	0	2	3	2	2	1	3	4	4	5	2	2
Utilities & Transportation (n=19)	4	5	5	1	0	1	7	11	10	7	3	3
TOTAL (n=168)	17	25	27	15	19	28	71	85	84	65	39	29

Table 4 Analysis of Business Segments and CGUs by Sector

Sector	Avg. No. of Business Segments			Avg. No. of CGUs			Ratio of CGUs to Business Segments			Δ in Ratio	
	2005	2006	2007	2005	2006	2007	2005	2006	2007	2006	2007
Commerce & Diversified (n=9)	3.56	3.33	3.22	1.44	2.22	2.56	0.41 : 1	0.67 : 1	0.79 : 1	63.41%	17.91%
Construction (n=17)	3.00	2.88	3.00	0.94	1.71	1.82	0.31 : 1	0.59 : 1	0.61 : 1	90.32%	3.39%
Drugs, Cosmetics, Healthcare & Chemicals (n=8)	2.75	2.88	3.13	1.38	1.5	1.38	0.50 : 1	0.52 : 1	0.44 : 1	4.00%	-15.38%
Electrical & Electronic (n=22)	3.00	2.95	2.95	1.32	1.73	1.68	0.44 : 1	0.58 : 1	0.57 : 1	31.82%	-1.72%
Financials (n=13)	4.15	4.31	4.15	1.92	2.08	2.15	0.46 : 1	0.48 : 1	0.52 : 1	4.35%	8.33%
Food & Beverages (n=8)	2.75	2.63	2.5	1.25	1.38	2.00	0.45 : 1	0.52 : 1	0.80 : 1	15.56%	53.85%
Machinery & Equipment (n=14)	3.21	3.21	3.21	0.93	1.43	1.57	0.29 : 1	0.44 : 1	0.49 : 1	51.72%	11.36%
Manufacturing (n=18)	3.11	3.06	3.00	0.94	1.28	1.67	0.30 : 1	0.42 : 1	0.56 : 1	40.00%	33.33%
Metal Product Manufacturers (n=13)	3.15	3.31	3.31	0.62	1.23	1.31	0.20 : 1	0.37 : 1	0.40 : 1	85.00%	8.11%
Miscellaneous (n=17)	3.82	3.82	3.82	1.24	1.71	2.76	0.32 : 1	0.45 : 1	0.72 : 1	40.63%	60.00%
Retailers, Textiles & Apparel (n=10)	3.30	3.00	3.10	0.8	1.90	2.20	0.24 : 1	0.63 : 1	0.71 : 1	162.50%	-84.13%
Utilities & Transportation (n=19)	4.05	3.95	3.95	2.05	3.05	3.11	0.51 : 1	0.77 : 1	0.79 : 1	50.98%	2.60%
TOTAL (n=168)	3.36	3.32	3.32	1.25	1.8	2.04	0.37 : 1	0.54 : 1	0.61 : 1	45.95%	14.81%

Table 5 Method Employed to Determine Recoverable Amount by Sector

Sector	Fair Value Method			Value in Use Method			Mixed Method			Method Not Disclosed		
	2005	2006	2007	2005	2006	2007	2005	2006	2007	2005	2006	2007
Commerce & Diversified (n=9)	-	-	-	7	8	9	-	-	-	2	1	-
Construction (n=17)	1	1	1	11	14	15	-	-	-	5	2	1
Drugs, Cosmetics, Healthcare & Chemicals (n=8)	-	-	-	8	8	8	-	-	-	-	-	-
Electrical & Electronic (n=22)	-	-	-	15	16	16	-	1	-	7	5	6
Financials (n=13)	1	-	-	8	8	9	3	4	3	1	1	1
Food & Beverages (n=8)	-	-	-	6	6	6	-	-	-	2	2	2
Machinery & Equipment (n=14)	-	1	1	6	11	11	1	1	1	7	1	1
Manufacturing (n=18)	1	-	-	7	15	15	-	-	-	10	3	3
Metal Product Manufacturers (n=13)	-	1	1	7	9	10	-	-	-	6	3	2
Miscellaneous (n=17)	3	2	2	9	8	11	-	3	3	5	4	1
Retailers, Textiles & Apparel (n=10)	-	1	2	5	7	6	-	1	1	5	1	1
Utilities & Transportation (n=19)	1	1	1	11	13	15	1	2	-	6	3	3
TOTAL (n=168)	**7**	**7**	**8**	**100**	**123**	**131**	**5**	**12**	**8**	**56**	**26**	**21**

Table 6 clearly shows that the disclosure of discount rates among Singapore firms in the sample was in aggregate inadequate when benchmarked against the requirements of the standard. Overall, a very high proportion of firms provided no information which would enable meaningful quantification of the discount rate used as part of the cash flow projections used in recoverable amount estimation.

The dominant choice of discount rate disclosure among those firms which made explicit and specific disclosures relating to the discount rates they had utilised in the context of impairment testing was to acknowledge the use

of a single firm wide discount rate. Despite the admonition that discount rates should be crafted to fit the explicit contours of the risks associated with each CGU, it was comparatively rare for sample firms to define explicit CGU specific discount rates which exhibited variation within firm. The data also demonstrates the existence of discount rates which appear to be unusually low, though the extent to which

these vary from reasonable risk adjusted rates is a matter not adverted to specifically in this study.[20]

This study also focused on growth rate disclosures. Table 8 provides evidence of poor compliance levels and disclosure quality in relation to this dimension of the requirements of FRS 36. The data in Table 8 shows that an average of approximately 40% of firms in the sample failed to make any meaningful disclosures in relation to assumed growth rates over the three years under investigation. Again, this is consistent with results which have been reported in relation to this phenomenon in other Asia Pacific jurisdictions, and raises serious questions about the extent to which FRS 36 can be fully implemented or enforced, even in jurisdictions with strong accounting professions and technical infrastructure.

The final key assumption in estimating the recoverable amount of CGUs in case of firms have adopted the value in use approach related to the disclosures made about the explicit cash flow forecast horizon. The analysis from Table 10 and Table 11 below summarized that the structure of the discounted cash flow models used by Singapore listed firms in 2005, 2006 and 2007 as tools for the estimation of CGU's recoverable. The analysis suggested firms simply use the single explicit cash flow forecast horizon in estimating the recoverable amount of the CGU. This is evidenced by the dominant selection of a single explicit forecast period with 86 (81.90%), 108 (80.00%) and 11 (79.86%) firms in 2005, 2006 and 2007 respectively. These firms are likely choosing a very easy and simple means of constructing the discounted cash flow models which therefore does not adequately reflect variations in business conditions among the CGUs and therefore, creates difficulties among the group uses in their investment decisions.

Only a small number of firms (5 firms in 2005 and 2006 and 4 firms in 2006) exercised the more sophisticated option of adopting and reporting multiple forecasting periods for cashflow models pertaining to each CGU.

V.   Conclusion

This study extends prior research through the presentation of a multi year study of the impairment testing disclosure compliance and quality phenomenon in Singapore. Applying a methodology consistent with earlier published studies of this question in relation to Australia, New Zealand and Malaysia, three substantial issues stand out. First, compliance rates with basic elements of the mandatory disclosure framework mandated under Singapore standard FRS 36 (an analogue to IAS 36) are surprisingly poor, particularly in light of the advanced nature of Singapore's economy, capital markets, financial and regulatory institutions. Second, poor compliance and patchy disclosure quality cannot be explained simply by reference to first year adoption teething effects. Third, the results evident on the basis of the data from Singapore are strikingly resemblant of the results uncovered

in analogous research conducted in other Asia Pacific jurisdictions. This increases the likelihood that the revelations of poor compliance and patchy disclosure quality in those jurisdictions was not a product of jurisdiction specific idiosyncrasies, but more likely, a systemic problem which transcends borders and manifests wherever IFRS has been adopted or is in the process of being adopted.

The results of this research reinforce the significance of the compliance issue as a matter for serious contemplation by academic researchers, practitioners, policy makers and regulators alike. Arguably, compliance continues to represent a phenomenon overlooked by many in the financial reporting research community, particularly in cases where research methodologies draw upon data compiled in commercial databases. In these instances, compliance quality is not a salient variable, since the underlying quality of the primary financial disclosures drawn upon as a basis for database construction are not visible or salient to researchers. In contemplating the rigour of research design, this is a matter for concern and caution.

Table 6 - Discount Rate Methodology (Value in Use and Mixed Method Firms Only)

Sector	Number of Firms			Multiple Explicit Discount Rates for each CGU			Single Explicit Discount Rates			Range of Discount Rates			No Effective Disclosure		
	2005	2006	2007	2005	2006	2007	2005	2006	2007	2005	2006	2007	2005	2006	2007
Commerce & Diversified	7	8	9	3	-	1	4	8	7	-	-	1	-	-	-
Construction	11	14	15	1	1	2	8	6	6	2	3	3	-	4	4
Drugs, Cosmetics, Healthcare & Chemicals	8	8	8	-	-	-	7	7	7	1	1	1	-	-	-
Electrical & Electronic	15	17	16	3	2	4	10	12	11	-	-	-	2	3	1
Financials	11	12	12	3	3	3	5	5	5	3	4	4	-	-	-
Food & Beverages	6	6	6	1	3	3	5	2	2	-	1	1	-	-	-
Machinery & Equipment	7	12	12	2	-	-	4	11	11	-	1	1	1	-	-
Manufacturing	7	15	15	-	-	1	6	12	12	1	1	1	-	2	2
Metal Product Manufacturers	7	9	10	1	1	1	6	7	8	-	1	1	-	-	-
Miscellaneous	9	11	14	4	3	4	3	4	6	-	2	2	2	2	2
Retailers, Textiles & Apparel	5	8	7	1	2	2	3	6	5	1	-	-	1	-	-
Utilities & Transportation	12	15	15	2	1	1	9	11	11	-	1	1	1	2	2
TOTAL (n=168)	105	135	139	21	16	21	70	91	91	8	15	16	6	13	11

Table 7 – Discount Rate Disclosures (Value in Use and Mixed Method Firms Only)

Sector	Number of Firms			Minimum Pre-tax Discount Rate (%)			Δ in Minimum				Maximum Pre-tax Discount Rate (%)			Δ in Maximum			
							Δ bps		Δ %					Δ bps		Δ %	
	2005	2006	2007	2005	2006	2007	2006	2007	2006	2007	2005	2006	2007	2006	2007	2006	2007
Commerce & Diversified	7	8	9	5.4	5.7	5.0	30	-70	5.56%	-12.28%	15.0	12.0	14.0	-300	200	-20.00%	16.67%
Construction	11	14	15	4.2	5.0	3.8	80	-120	19.05%	-24.00%	12.0	13.0	13.3	100	30	8.33%	2.31%
Drugs, Cosmetics, Healthcare & Chemicals	8	8	8	4.0	5.2	4.5	120	-70	30.00%	-13.46%	9.9	11.1	10.5	120	-60	12.12%	-5.41%
Electrical & Electronic	15	17	16	2.3	2.8	2.2	50	-60	21.74%	-21.43%	15.0	15.0	17.0	0	200	-	13.33%
Financials	11	12	12	3.0	6.0	6.0	300	0	100.00%	-	15.0	15.0	15.0	0	0	-	-
Food & Beverages	6	6	6	5.0	5.5	5.5	50	0	10.00%	-	10.5	10.44	9.0	-6	-144	-0.57%	-13.79%
Machinery & Equipment	7	12	12	4.7	5.0	5.0	30	0	6.38%	-	15.0	16.86	13.7	186	-316	12.40%	-18.74%
Metal Product Manufacturing	7	15	15	1.7	2.1	4.8	40	270	23.53%	128.57%	10.0	12.0	14.0	200	200	20.00%	16.67%
Miscellaneous Manufacturers	7	9	10	5.0	7.1	6.8	210	-30	42.00%	4.23%	16.7	24.4	15.0	770	-940	46.11%	-38.52%
Miscellaneous	9	11	14	4.8	5.0	5.0	20	0	4.17%	-	11.9	10.9	10.8	-100	-10	-8.40%	-0.92%
Retailers, Textiles & Apparel	5	8	7	6.3	5.0	5.0	-130	0	-20.63%	-	19.5	14.0	14.6	-550	60	-28.21%	4.29%
Utilities & Transportation	12	15	15	5.1	5.0	5.3	-8	28	-1.57%	5.58%	15.0	30.0	20.0	1500	-1000	100.00%	-33.33%
TOTAL	105	135	139	1.7	2.1	2.2	40	10	23.53%	4.76%	19.5	30.0	20.0	1050	-1000	53.85%	-33.33%

Table 8– Growth Rate Methodology (Value in Use and Mixed Method Firms Only)

Sector	Number of Firms			Multiple Explicit Discount Rates for each CGU			Single Explicit Discount Rates			Range of Discount Rates			No Effective Disclosure		
	2005	2006	2007	2005	2006	2007	2005	2006	2007	2005	2006	2007	2005	2006	2007
Commerce & Diversified	7	8	9	-	-	-	4	4	3	-	-	-	3	4	6
Construction	11	14	15	1	1	2	2	3	3	2	2	2	6	8	8
Drugs, Cosmetics, Healthcare & Chemicals	8	8	8	-	-	-	2	2	3	1	1	1	5	5	4
Electrical & Electronic	15	17	16	2	2	3	1	3	4	-	-	-	12	12	9
Financials	11	12	12	-	1	-	1	2	2	1	2	2	9	8	8
Food & Beverages	6	6	6	2	1	2	3	3	1	-	1	1	1	1	2
Machinery & Equipment	7	12	12	-	-	-	4	3	4	-	2	2	3	7	6
Manufacturing	7	15	15	-	-	-	5	6	5	-	-	1	2	9	9
Metal Product Manufacturers	7	9	10	-	1	1	2	5	3	-	-	-	5	3	6
Miscellaneous	9	11	14	3	1	2	1	2	3	-	3	2	5	5	7
Retailers, Textiles & Apparel	5	8	7	-	1	-	-	1	2	1	2	2	4	4	3
Utilities & Transportation	12	15	15	-	-	-	4	4	3	1	2	4	7	9	8
TOTAL	105	135	139	8	7	10	29	38	36	6	15	17	62	75	76

Table 9 Growth Rate Disclosures (Value in Use and Mixed Method Firms Only)

Sector	Number of Firms			Minimum Terminal Value Growth Rate (%)			Δ in Minimum				Maximum Terminal Value Growth Rate (%)			Δ in Maximum			
							Δ bps		Δ %					Δ bps		Δ %	
	2005	2006	2007	2005	2006	2007	2006	2007	2006	2007	2005	2006	2007	2006	2007	2006	2007
Commerce & Diversified	7	8	9	-	-	-	-	-	-	-	10.00	10.00	10.00	-	-	-	-
Construction	11	14	15	(2.00)	(20.00)	(39.00)	-1800	-1900	900.00%	95.00%	25.00	20.00	12.00	-500	-800	-20.00%	-40.00%
Drugs, Cosmetics, Healthcare & Chemicals	8	8	8	3.00	3.00	1.00	0	-200	-	-66.67%	15.00	25.00	20.00	1000	-500	66.67%	-20.00%
Electrical & Electronic	15	17	16	5.00	3.00	-	-200	-300	-40.00%	-100.00%	16.00	15.00	15.00	-100	-	-6.25%	-
Financials	11	12	12	-	-	2.00	-	200	-	-	15.00	11.00	10.00	-400	-100	-26.67%	-9.09%
Food & Beverages	6	6	6	-	-	3.00	-	300	-	-	18.00	20.00	20.00	200	0	11.11%	-
Machinery & Equipment Manufacturing	7	12	12	-	-	-	-	-	-	-	7.00	20.00	40.00	1300	2000	185.71%	100.00%
Metal Product Manufacturers	7	15	15	-	-	0.80	-	80	-	-	8.00	10.00	10.00	200	-	25.00%	-
Miscellaneous	7	9	10	-	-	-	-	-	-	-	14.00	28.00	40.00	1400	1200	100.00%	42.86%
Retailers, Textiles & Apparel	9	11	14	4.20	-	-	-420	-	100.00%	-	7.90	30.00	30.00	2210	-	279.75%	-
	5	8	7	3.00	3.00	3.00	-	-	-	-	5.00	10.00	10.00	500	-	100.00%	-
Utilities & Transportation	12	15	15	3.00	2.70	-	-30	-270	-10.00%	-100.00%	20.00	20.00	25.00	-	500	-	25.00%
TOTAL	105	135	139	(2.00)	(20.00)	(39.00)	-1800	-1900	900.00%	95.00%	25.00	30.00	40.00	500	1000	20.00%	33.33%

Table 10– Forecasting Period Methodology (Value in Use and Mixed Method Firms Only)

Sector	Number of Firms			Multiple Forecasting Period for each CGU			Single Forecasting Period			Range of Forecasting Period			No Effective Disclosure		
	2005	2006	2007	2005	2006	2007	2005	2006	2007	2005	2006	2007	2005	2006	2007
Commerce & Diversified	7	8	9	1	-	-	5	8	9	-	-	-	1	-	-
Construction	11	14	15	-	-	1	10	11	11	-	1	1	1	2	2
Drugs, Cosmetics, Healthcare & Chemicals	8	8	8	-	-	-	8	8	8	-	-	-	-	-	-
Electrical & Electronic	15	17	16	2	1	-	12	14	13	1	1	1	2	2	2
Financials	11	12	12	-	1	1	8	9	8	1	1	1	-	1	2
Food & Beverages	6	6	6	-	-	1	6	4	5	-	-	-	-	1	-
Machinery & Equipment	7	12	12	-	-	-	7	11	11	-	-	-	-	1	1
Manufacturing	7	15	15	-	-	1	7	11	10	-	1	1	-	3	3
Metal Product Manufacturers	7	9	10	-	-	-	6	9	10	-	-	-	1	-	-
Miscellaneous	9	11	14	1	1	1	4	4	8	-	1	-	4	5	5
Retailers, Textiles & Apparel	5	8	7	-	1	-	4	6	6	-	-	-	1	1	1
Utilities & Transportation	12	15	15	1	-	-	9	13	12	-	-	-	2	2	3
TOTAL	105	135	139	5	4	5	86	108	111	2	5	4	12	18	19

Table 11– Forecasting Period Disclosures (Value in Use and Mixed Method Firms Only)

Sector	Number of Firms			Minimum Forecasting Period			Δ in Minimum				Maximum Forecasting Period			Δ in Maximum			
							Δ bps		Δ %					Δ bps		Δ %	
	2005	2006	2007	2005	2006	2007	2006	2007	2006	2007	2005	2006	2007	2006	2007	2006	2007
Commerce & Diversified	7	8	9	1	1	1	-	-	-	-	20	20	20	-	-	-	-
Construction	11	14	15	3	3	<1	-	-290	-	-96.67%	39	35	10	-400	-2500	-10.26%	-71.43%
Drugs, Cosmetics, Healthcare & Chemicals	8	8	8	2	3	3	100	-	50.00%	-	5	5	22	-	1700	-	340.00%
Electrical & Electronic	15	17	16	1	1	1	-	-	-	-	6	6	10	-	400	-	66.67%
Financials	11	12	12	2	2	3	-	100	-	50.00%	23	20	20	-300	-	-13.04%	-
Food & Beverages	6	6	6	3	3	3	-	-	-	-	5	5	5	-	-	-	-
Machinery & Equipment	7	12	12	3	2	1	-100	-100	-33.33%	-50.00	10	15	15	500	-	50.00%	-
Manufacturing	7	15	15	3	3	3	-	-	-	-	5	10	15	500	500	100.00%	50.00%
Metal Product Manufacturers	7	9	10	3	3	3	-	-	-	-	5	5	5	-	-	-	-
Miscellaneous	9	11	14	3	2	3	-100	100	-33.33%	50.00	5	5	9	-	400	-	80.00%
Retailers, Textiles & Apparel	5	8	7	3	1	1	-200	-	-66.67%	-	5	6	5	100	-100	20.00%	-16.67%
Utilities & Transportation	12	15	15	3	1	1	-200	-	-66.67%	-	5	5	6	-	100	-	20.00%
TOTAL	**105**	**135**	**139**	**1**	**1**	**0.10**	-	**-90**	-	**-90.00%**	**39**	**35**	**22**	**-400**	**-1300**	**-10.26%**	**-37.14%**

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Endnotes

1 *Inland Revenue Commissioner v Muller & Co's Margarine Ltd* (1901) AC 217 at 223 per Lord Macnaghten.

2 See, for example, Carlin & Finch [3], Carlin *et al.* [6] and Carlin & Finch [4].

3 Since the datasets with which they work may not have the homogenous quality researchers assume them to have, nor necessarily correspond to the phenomena in which researchers have interest – adding to the difficulty of cross sectional and time series analysis.

4 See www.asc.gov.sg./frs/index.htm

5 The Accounting Standards Council of Singapore, which is the local standard setting agency.

6 In 2005 there were 562 such firms. This grew to 593 in 2006 and 623 by 2007.

7 See, for example, Carlin & Finch [3].

8 The CGU aggregation problem has also been recognized elsewhere in the past literature. For example, Wines et al [21]. It is notable that the literature concerning segment reporting, which shares close parallels with aspects of the literature which touches on CGU definition also reports high variation in practice, and a tendency to report fewer rather than more sectors, given the potential competitive costs associated with these disclosures. See also Rennie & Emmanuel [19]; Doupnik & Seese [10].

9 Pursuant to FRS 14 – Segment Reporting

10 See Carlin & Finch [2].

11 Paragraph 20 of FRS 36.

12 FRS 36, Paragraph 134 d (i)

13 FRS 36, Paragraph 134 d (ii)

14 FRS 36, Paragraph 134 d (iii)

15 FRS 36, Paragraph 134 d (iv)

16 FRS 36, Paragraph 134 d (v)

17 Recall from earlier literature that aggregation at the CGU level is problematic from the perspective of rigorous impairment testing because it allows the co-mingling of higher and lower risk cashflow streams, better and poorly performing elements of the business and in this way, has the potential to mask the existence of impairments within the overall business portfolio.

18 These CGU to Segment ratios are also materially lower than those observed in other advanced economic jurisdictions in the Asia-Pacific region. See Carlin & Finch [3] for further and better particulars of the contemporary Australian situation.

19 It is clearly shown that these firms breach of FRS 36 due to failure to disclose the information regarding the method employed to determined recoverable amount.

20 However, see Carlin & Finch [3] for a detailed treatment of this particular issue.