

### The Value Relevance of Goodwill: IFRSs and Global Financial Crisis (GFC)

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#### Abstract

This study contributes to the issue of accounting for goodwill by examining the impact of changing from the Australian Generally Accepted Accounting Principles (AGAAP) to Australian International Financial Reporting Standards (AIFRS) on goodwill, 3 years (2002 to 2004) before and 3 years (2006 to 2008) after AIFRS adoption. The sample is drawn from top 200 companies listed on the Australian Stock Exchange (ASX). This study applies multiple regressions. The dependent variable is the closing share price 3 months after the balance sheet date. The independent variables consist of earnings per share, book value per share, goodwill in the balance sheet, goodwill in the income statement (goodwill amortisation and goodwill impairment) and goodwill acquisition. The findings indicate that goodwill accounted for in the income statement and balance sheet do not provide increased explanatory power of market value under AIFRS compared to AGAAP. Moreover, the goodwill in the income statement does not show value relevance in year 2007, but became significant in year 2008 during the global financial crisis (GFC). Also, the age of goodwill recorded in the balance sheet does not affect the value relevance of earnings and book value in the post-adoption period. This study contributes new evidence on accounting for goodwill



under pre and post-IFRS accounting regimes in Australia. This is also the first study to examine the separate effects of goodwill accounting on earnings and net assets, with special attention given to the period before and during the GFC in capital markets.

Keywords: Goodwill, IFRS adoption, Value relevance, Global financial crisis, Financial reporting

#### 1. Introduction

The issue of accounting for goodwill has been debated in many countries, with opinion changing several times as reflected in past reissues of exposure drafts and accounting standards on goodwill by various standard setting bodies. The dichotomy of having to preserve prescribed recognition criteria on the one hand and the need to report useful information on the other has led to the many controversial issues debated on the subject of goodwill (Seetharaman et al, 2004). An unsettled position or a laissez-faire position by standard setters on goodwill accounting over the past has encouraged companies' management to select the treatments that give them the most desired financial results. These abuses have been well documented (Godfrey and Koh, 2001; Chalmers and Godfrey, 2006; Wines et al, 2007). They include, for example, allocating low values to acquired assets and a correspondingly high value to goodwill that allows low future depreciation charges on acquired assets; amortising/ writing off goodwill in a way that ensures the desired impact on current and foreseeable earnings numbers.

Given the prevalence of goodwill as a vehicle for the management of reported earnings and assets over the past, an important research question is whether information about the accounting treatment of goodwill and its related effects on reported earnings and net assets has value relevance to equity investors? As stated by Godfrey and Koh (2001), the debate (about goodwill accounting) is an interesting exercise, its real importance can only be appreciated if the accounting (for goodwill) affects real economic decisions. If accounting for goodwill affects firm valuations, it provides financial information that is relevant to financial statement users and is said to be value relevant (Barth, 2000).

The purpose of this study is to investigate whether accounting for goodwill under pre and post-IFRS accounting regimes in Australia (i.e., under AGAAP and AIFRS) affects the market value of equity in Australian companies. This investigation will extend to the separate effects of goodwill accounting on earnings and net assets, with special attention given to the period before and during the GFC in capital markets. The justification for this focus is that reported earnings and book value of net assets can be separately modified by the chosen method of accounting for goodwill, inferring that the value relevance of information on goodwill accounting the assets number. Moreover, a change in the value relevance of the net asset number relative to the earnings number can be induced by a macroeconomic shock (Vander Bauwhede, 2006).

Specifically, the objectives of this study are:

(i) To model and test the extent of value relevance of goodwill's effect on reported earnings



and reported book value of net assets, respectively, when compared across the different accounting regimes of the AGAAP period (year 2002 to 2004) and the AIFRS period (year 2006 to 2008).

(ii) To provide evidence, supplementary to objective (i) on the rate of decline in value relevance of goodwill as it ages from its year of acquisition, thus providing an investor indication of its economic life.

(iii) To model and test the extent of change in value relevance of goodwill reported in the income statement compared to the balance sheet during the pre-GFC (year 2007) and during the GFC (year 2008).

The reminder of this paper is structured as follows. Section 2 briefly explores the setting for this study. This is followed by a discussion on the literature review and the development of hypotheses. Section 4 describes the research method used, with section 5 providing data analysis and discussion. Section 6 concludes by summarising the findings and discussing the implications of the results of this study.

#### 2. Setting for the Study

This study investigates the accounting treatment for goodwill before and after IFRS adoption in the Australian reporting regime. Like European Union countries, Australian listed companies fully adopted and applied IFRS to annual financial reporting periods beginning on or after 1 January 2005.

Before January 2005, under the Australian Generally Accepted Accounting Principles (AGAAP), the Australian Accounting Standard Board's AASB 1013, Accounting for Goodwill defined goodwill as "future benefits from unidentifiable assets". Future benefits from unidentifiable assets, by nature, could not normally be individually recognised, only total purchased goodwill could to be recorded in the accounts. That is, goodwill consists of a variety of unidentifiable assets, which can only be measured collectively, not individually. AASB 1013 did not permit the recognition of internally generated goodwill. Purchased goodwill is measured as the excess of the cost of acquiring the entity over the sum of the fair values of the identifiable net assets acquired in a business acquisition. In accordance with AASB 1013, the goodwill must be amortised by systematic charges against profits over the period of time during which the benefits of the unidentifiable assets are expected to arise, but not exceeding 20 years. AASB 1013 also required the unamortised balance of goodwill to be reviewed at each reporting date and expensed against profit to the extent that future benefits are no longer probable. A controversial aspect of the AASB 1013 treatment of goodwill is the amortisation requirement. The assumption that goodwill is a wasting or finite-life asset, whose life can be reasonably reliably estimated, ignores the fact that some unidentifiable assets may have either an indefinite or an infinite useful life. The notion of indefinite life is used in relation to identifiable intangible assets that have a long finite life, but that finite life cannot be reliably estimated and, therefore, amortisation cannot be reliably applied. Of course, identifiable intangible assets that have an infinite life (non-wasting assets) would not need amortising.



With the adoption of IFRS by Australia in 2005, Australian companies must now follow the requirements of AASB 3 Business Combinations issued by the International Accounting Standards Board (IASB). Under AASB 3 Business Combinations, firms no longer amortise recognised goodwill on a straight-line basis but are required to test goodwill for impairment annually and report goodwill at its acquired cost less any accumulated impairment loss in accordance with AASB 136 Impairment of Assets. Subsequent reversals of impairment losses are not permitted.

In an assessment of the former Australian and the new IFRS treatments for goodwill, Wines et al (2007) discuss the increase in complexity and subjectivity inherent in the IFRS requirements. They argue that the identification and valuation of cash-generating units and goodwill require numerous assumptions to be made in estimating fair value, value in use and recoverable amount. They conclude that the reliability of reported numbers and the opportunity for earnings management remain contentious issues facing goodwill accounting under the AIFRS.

#### 3. Literature and Hypotheses Development

Many prior studies have investigated the information content of accounting goodwill numbers. In the pre-IFRS adoption period, Dahmash et al (2009), Bugeja and Gallery (2006), Ritter and Wells (2006), Godfrey and Koh (2001), Henning et al (2000), Jennings et al (1996) and Chauvin and Hirschey (1994) find that intangible assets and goodwill have positive value relevance. Similarly, Hirschey and Richardson (2002) and Jennings et al (1996) find that negative stock price effects are tied to goodwill write-off announcements and goodwill amortisation. In the year of first time IFRS adoption, Goodwin and Ahmed (2006) reveal a decline in value relevance of goodwill under AIFRS compared to AGAAP. During the post-IFRS adoption period, Chalmers et al (2008) find that AIFRS generally conveys incrementally useful information for investors relating to goodwill accounting numbers. In a more specifically focused study, Lapointe-Antunes et al (2009) examine the value relevance and timeliness of transitional goodwill impairment losses of goodwill impairment and share prices.

While these prior studies produce some supporting and conflicting findings about the value relevance of goodwill numbers, they have not made a comparison of the relative value relevance of goodwill numbers between the 3 year periods before and 3 year periods after IFRS adoption. The advocacy from the IASB is that IFRS will provide improved quality of accounting standards to adopting countries. Their relevance to investors will also increase because comparability of financial reports internationally will enhance the efficiency of allocation of resources across national boundaries. In Australia, consistent with the rest of the world, many claimed benefits for adopting AIFRS were espoused by the AASB and the Australian government such as improving access to international capital markets, reducing the cost of capital, improving communication with investors and enhancing accounting quality (Jones and Higgins, 2006).

Given the claimed benefits of adopting AIFRS, this study expects an increase in the



explanatory power to investors of goodwill accounted for in both the income statement and balance sheet in the AIFRS period compared to the AGAAP period. Hence the first hypothesis is:

Hypothesis 1: Goodwill accounted for in the income statement and balance sheet provides increased explanatory power of market value under the AIFRS period compared to the AGAAP period.

Turning to the specific controversy about whether purchased goodwill should be treated as having a finite economic life and amortised (under AGAAP) or an infinite life unless it is impaired (under AIFRS). Evidence on the value relevance of goodwill as it ages from its acquired date, can help address this issue. Bugeja and Gallery (2006) examine whether the market attaches different values to the components of acquired goodwill between years 1995 to 2001 (AGAAP). Their finding is that goodwill acquired in the observation year and each of the previous 2 years is positively associated with firms share value, but there is no significant association with goodwill acquire more than 2 years previously. Drawing on Bugeja and Gallery's (2006) approach, the value relevance of goodwill accounted for in the earnings and book value of net assets can be determined over an aging period for goodwill acquisitions. This test needs to be based in a period of unchanging accounting regime, so is applied to the post-adoption period (2006 to 2008) in this study. If goodwill acquired is regarded as an asset, it is expected to be priced by the market for as long as it continues to be perceived as generating economic benefits. But, if the economic benefits of goodwill acquired are considered to endure over a shorter period than the nominated useful life, then the value relevance of goodwill acquire should reduce with age (Bugeja and Gallery, 2006). The second hypothesis addressed in this study is:

# Hypothesis 2: The age of goodwill recorded in the balance sheet since its acquisition date is significantly inversely related to its value relevance in the AIFRS period.

During the GFC starting from late 2007 onwards, the financial performance (e.g., current ratio, return on assets) and the share price of many listed companies sharply declined. Evidence of the effect of an economic shock on the value relevance of reported earnings and book value of net assets has been provided from the Asian financial crisis of the late-1990s. Davis-Friday et al (2006) investigate the value relevance of earnings and book value of net assets in four Asian countries over the period surrounding the Asian financial crisis. Results of their study are mixed. For instance, their results indicate that value relevance of earnings in Indonesia and Thailand significantly reduced during the Asian financial crisis while the value relevance of book value increased. In Malaysia, the value relevance of both earnings and book value decreased during the crisis. Other related studies explore the value relevance of accounting information during the Asian financial crisis and also provide mixed results (Graham et al, 2000; Ho et al, 2001). These studies suggest that economic conditions affect the valuation of accounting information; however, they provide inconsistent evidence implying that firms and/or countries may be affected differentially by an economic crisis.

Unlike prior studies, this study focuses specifically on the changes, caused by an economic



shock, in the value relevance of goodwill in income compared to goodwill in assets. Although an economic shock can affect companies and countries differently, the evidence by Davis-Friday et al (2006) points to a decline in the value relevance of earnings and an increase in the value relevance of net assets during a financial crisis. The implication is that shareholders give increased attention to the balance sheet of a company during a financial crisis. The third hypothesis is formulated as follows:

*Hypothesis 3: Goodwill accounted for in the balance sheet became more value relevant than goodwill accounting for in the income statement as companies entered the period of the GFC.* 

#### 4. Method

#### 4.1 Sampling

The sample for this study is drawn from top 200 companies listed on the Australian Stock Exchange (ASX). Data are collected for 6 years: 3 years before and 3 years after the year of adoption of IFRS in Australia. Similar to Jermakowicz et al (2007), year 2005 is used as the event year where Australia first adopted IFRS to represent the years into pre and post-adoption period. Years before the event year are classified as before the event year and years after the event year are classified as after the event. Thus, the year of the event (2005) is excluded from the analyses. Companies are excluded from the sample for the following reasons:

- Financial industry companies such as banks, financial institutions, insurance and superannuation as these companies have different reporting requirements and balance sheet structures.
- Disclosing a zero balance for goodwill under both AGAAP and AIFRS.
- Foreign companies listed on ASX that also may have different reporting requirements.
- No share price data available on Aspect Huntley's FinAnalysis for the required date. (i.e., firms listed on the ASX from year 2002 onwards).
- Have been suspended and delisted on the ASX during the sampling period.

After these exclusions, 82 companies were left in the sample. The final sample comprises of 492 firm-year observations during the periods 2002 to 2004 and 2006 to 2008, each of which disclosed a non-zero balance under AGAAP or AIFRS for goodwill.

Data for these firm-years on companies' market capitalisation, number of outstanding shares, net income, book value of equity, earnings per share and book value per share are obtained from the OSIRIS database. Additionally, annual reports for each firm-year in the sample are downloaded from Connect 4 database. Accounting data such as the net carrying amount of goodwill, goodwill amortisation (AGAAP) and goodwill impairment (AIFRS) are extracted from the notes to accounts. Data are also collected on goodwill acquired through the acquisition of other entities in 2008 and acquired in the 2 years prior to 2008 to allow the remaining balance of goodwill in the acquisition year to be separated into goodwill of different 'ages'. The dependent variable for this study is the closing share price 3 months



after balance sheet date. Consistent with previous studies, this data is used to allow sufficient time for the release of a company's annual report and its financial information to be impounded in the share price. The closing share price 3 months after balance sheet date is obtained from Aspect Huntley's FinAnalysis online database.

#### 4.2 Regression Models

The value relevance of goodwill is compared between the periods 2002 to 2004 (pre-adoption, AGAAP) and 2006 to 2008 (post-adoption, AIFRS), applied using the ordinary least squares regression models as follows:

Model 1: Value relevance of goodwill

$$P_{j,t+.25} = \beta_0 + \beta_1 (NI_{j,t} GWNI_{j,t}) + \beta_2 (BV_{j,t} GWBS_{j,t}) + \beta_3 GWBS_{j,t} + \beta_4 GWNI_{j,t} + \varepsilon_{j,t}$$

Where:

 $P_{j,t+.25}$  is the share price for firm j three months after the balance sheet date.

NI<sub>j,t</sub> \_GWNI<sub>j,t</sub> is the net income excluding goodwill for firm j, for the time t-1 to t.

 $BV_{j,t}$ \_GWBS<sub>j,t</sub> is the book value of equity excluding goodwill in balance sheet for firm j at the end of period t.

 $GWBS_{j,t}$  is the net carrying amount for goodwill in balance sheet for firm j at the end of period t.

GWNI<sub>i,t</sub> is the goodwill in income statement for firm j, for the time t-1 to t.

 $\varepsilon_{j,t}$  is the error term of the ordinary least squares regression.

To mitigate problems associated with heteroskedasticity, all variables are divided by number of outstanding shares at the end of period t. By running Model 1 for the periods 2002 to 2004 (AGAAP period) and 2006 to 2008 (AIFRS period) respectively, conclusions can be drawn about whether value relevance varies between pre and post-adoption for goodwill accounting in the financial statements. Changes in the overall value relevance of AIFRS and AGAAP when goodwill is modeled as a "carve out" from earnings and equity are reflected in the differences in adjusted  $R^2$ . With many claimed benefits for adopting AIFRS, this study expects that there is a strengthening of the relationship between goodwill numbers and market value of a company when adopting AIFRS. A caution to this point is that GWNI refers to goodwill amortisation in the AGAAP period and goodwill impairment in the AIFRS period. Goodwill write-offs are not collected for this study.

Model 2: Value relevance of goodwill's age since acquisition

Where:

 $GWACQ_{i,y0}$  is the goodwill acquired through acquisition for firm j in the current year.



GWACQ<sub>j,y-1</sub> is the goodwill acquired through acquisition for firm j in the previous year.

GWACQ<sub>i,y-2</sub> is the goodwill acquired through acquisition for firm j in 2 years earlier.

When Model 2 is run on data in the AIFRS period, conclusions can be drawn as to whether the age of goodwill acquisitions affect the value relevance of the goodwill asset. Hence, in this study, if the goodwill acquired is recognised as an asset, it might be expected that its age since recognition would affect its price in the market.

Model 3: Value relevance of goodwill under economic shock conditions

$$\begin{split} P_{j,t+.25} &= \beta_0 + \beta_1 (NI_{j,t}\_GWNI_{j,t}) + \beta_2 (BV_{j,t}\_GWBS_{j,t}) + \beta_3 GWBS_{j,t} + \beta_4 GWNI_{j,t} + \beta_5 ECO0708_{j,t} \\ &+ \epsilon_{j,t} \end{split}$$

Where:

 $ECO0708_{j,t}$  is the year 2007 (before economic crisis) and Year 2008 (economic crisis) for firm j.

When data for the two year period of 2007 to 2008 is applied in Model 3, it can be determined whether the control variable,  $ECO0708_{j,t}$  is significantly related to share price. If so, then Model 3 (excluding the control variable) will be run separately for year 2007 (before economic crisis) and year 2008 (during economic crisis), and the significance of the independent variables compared across the two years.

#### 5. Data Analysis and Discussion

#### 5.1 Descriptive Statistics

A profile of the sampled companies in terms of their industry and size is summarised in Table 1. Although the sample is grouped as larger and smaller firms, they are all amongst the largest top 200 companies listed on the ASX. The mean market capitalisation of sampled companies is \$5,442M. The sample is partitioned into large and small companies (as shown in Table 1) based on the mean market capitalisation. In terms of industry spread, Table 1 shows that the number of firm-year observations in each industry membership ranges from 6 to 126. The industries most represented are Industrials (25.6%), Consumer Discretionary (19.5%), Materials (19.5%) and Consumer Staples (12.2%). That is, the sample is selected in a way that seeks to control to some extent for the dominance of any one industry type or skewness in company size.

Industry	GICS	Larger	Firms	Smaller	Firms	Tota	al
Membership	Code	Ν	%	Ν	%	Ν	%
Consumer Discretionary	25	17	16	79	20.5	96	19.5
Consumer	30	22	20.8	38	9.8	60	12.2

Table 1. Industry, membership and firm size



Observations		100	100	500	100	772	100
Total Firm Year		106	100	386	100	492	100
Utilities	55	0	0	12	3.1	12	2.4
ons Services							
Telecommunicati	50	6	5.7	0	0	6	1.2
Materials	15	30	28.3	66	17.1	96	19.5
Technology							
Information	45	1	0.9	17	4.4	18	3.7
Industrials	20	21	19.8	105	27.2	126	25.6
Health Care	35	3	2.8	45	11.7	48	9.8
Energy	10	6	5.7	24	6.2	30	6.1
Staples							

Table 2 provides descriptive statistics relating to differences between the pre (AGAAP) and post (AIFRS) adoption measures of various financial reporting data for all the firm-year observations (n = 492) on a per share basis. All variables in the regression models are measured on per share basis to reduce the problems associated with heteroskedasticity.

Variable	Period	Mean	Difference of Mean	t-value	Sig.	Std. Dev.
EPS	AGAAP	0.383	0.438	3.686	0.000	0.615
	AIFRS	0.821			-	1.758
BV	AGAAP	2.655	1.118	2.924	0.004	2.818
_	AIFRS	3.773			-	5.292
GWBS	AGAAP	0.511	1.089	4.661	0.000	0.838
_	AIFRS	1.600				3.567
GWNI	AGAAP	0.059	- 0.008	- 0.166	0.868	0.014
	AIFRS	0.051				0.465

Table 2. Comparison of means for pre and post-AIFRS adoption

Goodwill in net income (GWNI) represents goodwill amortisation (AGAAP) and goodwill impairment (AIFRS) recorded by firms. The lower reported goodwill in net income per share (GWNI) under AIFRS reflects the fact that firms no longer amortise goodwill yearly and goodwill amortisation expense is replaced by goodwill impairment loss based on frequent tests of the value of goodwill. Firms are required to test goodwill for impairment annually and report goodwill at its acquired cost less any accumulated impairment loss in accordance with AASB 136 Impairment of Assets. However, Table 2 reveals that the accounting switch from an amortisation to an impairment approach has not significantly reduced GWNI.



#### 5.2 Assumptions in Parametric Data Analysis

Parametric data are required in regression analysis. As previously mentioned, to mitigate problems associated with heteroskedasticity, all variables in the regression models are divided by the number of outstanding shares at the end of period t. Year 2005 is used as the event year where Australia first adopted IFRS to separate the pre and post-adoption periods. Because of possible 'teething problems' in the application of AIFRS in the 2005 year of adoption, this year of the event is excluded from the analyses of before and after periods.

Initial descriptive statistics for the independent variables show non-normality in the data distributions with significance values for both Kolmogorov-Smirnov test and Shapiro-Walk test are less than 0.05 (p < 0.05). Also, skewness and kurtosis levels are outside normal tolerance limits. For all the variables in this study, Blom normal score transformation is applied because neither logarithmic nor square root transformation yielded a normal distribution of these measures (Kanel et al, 2008). Blom scores represent rank approximations of the exact order of a normal distribution (Kraja et al, 2007). Using Blom's proportional estimation formula in SPSS, the assumption of normality is satisfied (data is normally distributed).

To test for multicollinearity between independent variables in each of the regression analyses, the variance inflation factor (VIF) and tolerance is calculated and presented in the respective regression tables given below. These results reveal that VIF and tolerance are within acceptable ranges, indicating no significant multicollinearity is detected.

# 5.3 Results for the Value Relevance of Goodwill Compared for the AGAAP and AIFRS Periods

This section provides a test of Hypothesis 1. Table 3 presents the results of tests of relative value relevance of goodwill in the income statement (GWNI) and the balance sheet (GWBS).

odel Summar	y			
<b>R</b> Square	Adjusted R	Std Error of	Anova	a
	Square	the Estimate	F- value	Sig.
0.619	0.613	0.594	97.986	0.000
0.605	0.599	0.623	92.399	0.000
	<b>R Square</b> 0.619	Square   0.619 0.613	R SquareAdjusted R SquareStd Error of the Estimate0.6190.6130.594	R SquareAdjusted R SquareStd Error of the EstimateAnova F- value0.6190.6130.59497.986

Table 3. Value relevance of goodwill for the years 2002 to 2004 (pre-adoption, AGAAP) and 2006 to 2008 (post-adoption, AIFRS)

Panel B: Regression Coe	fficients				
Dependent Variable:	Unstandardised	Standa	t-value	Sig.	Collinearity
Share Price	Coefficients	rdised			Statistics
		Coeffic			
		ients			

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Period	Variables	В	Std.	Beta			Toler	VIF
			Error				ance	
AGAAP	Intercept	-0.177	0.063		-2.821	0.005		
	NI_GWNI	0.370	0.054	0.364	6.885	0.000	0.565	1.769
	BV_GWBS	0.331	0.054	0.323	6.159	0.000	0.576	1.736
	GWBS	0.331	0.069	0.306	4.780	0.000	0.385	2.599
	GWNI	0.153	0.074	0.132	2.074	0.039	0.391	2.556
	Intercept	0.108	0.056		1.942	0.053		
	NI_GWNI	0.540	0.047	0.563	11.536	0.000	0.688	1.454
AIFRS	BV_GWBS	0.098	0.043	0.106	2.262	0.025	0.745	1.343
	GWBS	0.365	0.043	0.362	8.422	0.000	0.884	1.131
	GWNI	0.262	0.092	0.120	2.849	0.005	0.917	1.091

The focus is on estimating Model 1. Two separate regression models are estimated for the respective samples of each period; the first includes goodwill in balance sheet and income statement reported under AGAAP and the second includes goodwill in balance sheet and income statement reported under AIFRS. Changes between the value relevance of AIFRS and AGAAP of goodwill are tested for significance by using period dummy interactions with GWBS and GWNI. When these two interaction variables are added to the models in Table 3, the results reveal that both GWBS x Period is significant (sig. = 0.051) and GWNI x Period is significant (sig. = 0.034). Hence, goodwill recorded in the balance sheet and income statement is significantly different between the AGAAP and AIFRS periods.

Results in Panel A of Table 3 reveal a very small change in the Adjusted  $R^2$  (-0.014) between AIFRS (0.599) and AGAAP (0.613). For AGAAP, adjusted  $R^2$  shows that share price accounts for 61.3% of the variation in the model; by comparison, for AIFRS, adjusted  $R^2$  shows that share price accounts for 59.9% of the variation in the model. Under the AIFRS regime, the value relevance of the overall earnings and book value model has not improved relative to the superseded AGAAP regime, as would be predicted by professional accounting bodies.

The test of Hypothesis 1 is found in Panel B of Table 3. The independent variables all display a significant positive relationship to share price (p < 0.05) in the AGAAP and AIFRS models alike. Earnings (excluding goodwill), book value of net assets (excluding goodwill), goodwill in net assets and goodwill in net income have each retained their value relevance under AIFRS and AGAAP. Since this result reveals that goodwill accounted for in the income statement and balance sheet do not provide increased explanatory power of market value in the post-IFRS period, Hypothesis 1 is rejected.

This study lends support to prior studies of Australian data from the pre-AIFRS adoption period by Dahmash et al (2009), Ritter and Wells (2006) and Godfrey and Koh (2001), that intangible assets and goodwill have value relevance. While Goodwin and Ahmed (2006) showed a decline in the value relevance of goodwill, their study was over a much longer period of 25 years pre-AIFRS. The other important Australian evidence is related to the year of AIFRS adoption (2005) where Chalmers et al (2008) found that AIFRS generally conveys



incrementally useful information for investor's in respect of goodwill but not identifiable intangible assets.

These prior studies have not provided evidence of value relevance of goodwill accounting over the several years since AIFRS adoption. Hence this study adds new evidence that, despite the substantial accounting changes to goodwill valuation and write-down methods wrought by AIFRS, there has been no further improvement in the value relevance of goodwill numbers in financial statements. The implication is that the method of accounting for a financial statement item, such as goodwill that does not have cash flow consequences will be of no relevance to investors.

#### 5.4 The Effect of Age of Acquired Goodwill on Value Relevance

Hypothesis 2 is tested in this section. Table 4 presents the results of the effect of the age of acquired goodwill on the value relevance of earnings and book value of equity in the post-adoption period (year 2006 to 2008).

Table 4. The effect of age of acquired goodwill on the value relevance of earnings and book value of equity in the post-adoption period (year 2006 to 2008)

R Square	Adjusted R	Std Error of		Anova
	Square	the Estimate	F- value	Sig.
0.535	0.505	0.695	17.50	0.000
anel B: Regres	ssion Coefficients			
Dependent	Unstandardised	Standardised	t-value S	ig. Collinearity
				-
ariable:	Coefficients	Coefficients		Statistics

Variables	В	Std.	Beta			Tolerance	VIF
		Error					
Intercept	-0.014	0.077		-0.177	0.860		
NI_GWNI	0.647	0.091	0.631	7.135	0.000	0.783	1.278
BV_GWBS	0.161	0.086	0.161	1.863	0.066	0.823	1.215
GWACQPS 08	0.144	0.101	0.129	1.419	0.160	0.735	1.360
GWACQPS 07	-0.001	0.108	-0.001	-0.012	0.990	0.636	1.572
GWACQPS 06	0.022	0.114	0.020	0.197	0.844	0.614	1.630

The focus is on estimating Model 2. Running the model in the post-adoption period conclusions can be drawn whether the age of goodwill affects the value relevance of earnings and book value of equity. Goodwill acquisitions are partitioned into the components of goodwill acquired in the current and each of the previous 2 years.



In Panel A of Table 4, the model is seen to have strong explanatory power (adjusted  $R^2 = 0.505$ ). In Panel B, the coefficient on goodwill acquisition per share in current year (GWACQPS 08) = 0.144 which is not significant at 0.160 (t = 1.419, p > 0.05), the coefficient on goodwill acquisition per share in the previous year (GWACQPS 07) = -0.001 which is also not significant at 0.636 (t = -0.012, p > 0.05) and the coefficient on goodwill acquisition per share in the previous 2 years (GWACQPS 06) = 0.022 which is not significant at 0.844 (t = 0.197, p > 0.050). Considering these results, goodwill acquired in the observation year and each of the previous 2 years is not providing value relevance to the market. Hence, Hypothesis 2 is rejected.

These results are in contrast to Bugeja and Gallery's (2006) results conducted in the pre-AIFRS period of 1995 to 2001. They found that goodwill acquired in the observation year and each of the previous two years is positively associated with firm value but there is no significant association with goodwill acquired more than two years previously. This contrasting result can be reasoned from the nature of the change in accounting treatment of goodwill required under AIFRS. Previously in the AGAAP period, goodwill was amortised and it's written down acquisition value, not its fair value was recorded in the consolidated accounts. So market participants would consider its fair value instead. According to Bugeja and Gallery (2006), goodwill acquired was regarded as an asset and priced by the market for the period it was recognised. However, when AIFRS required the carrying amount of goodwill to be treated as impairment instead of an amortisation, age appears to no longer be a fact valued by the market. The fair value approach to goodwill in which AIFRS requires an annual assessment of the lower of value-in-use and recoverable amount means the age of goodwill since acquisition is no longer a relevant measure to investors.

#### 5.5 Value Relevance of Goodwill in the Global Financial Crisis (Year 2007 to 2008)

Hypothesis 3 is tested in this section. Table 5 presents the results of tests of relative value relevance of goodwill under different economic conditions for the years 2007 to 2008. The control variable  $ECO0708_{j,t}$  included in Model 3 and run on pooled data for the two year period of 2007 to 2008 is found to be significantly related to share price. Consequently, Model 3 (excluding the control variable  $ECO0708_{j,t}$ ) is run separately for year 2007 (pre-GFC) and year 2008 (during GFC), and the significance of the independent variables are compared across the two years. The results are given in Table 5.

Panel A:	Model Summary	y			
Year	R Square	Adjusted R	Std Error of	Anov	a
		Square	the Estimate	F- value	Sig.
2007	0.665	0.647	0.570	38.172	0.000
2008	0.571	0.549	0.701	25.660	0.000

Table 5. Value relevance of goodwill under different economic conditions (year 2007 to 2008)



Panal R. Regression Coefficients

ents Statistics   Image: Constraint of the second seco
1.843 0.069
1.843 0.069
0.619 7.347 0.000 0.613 1.631
0.059  0.744  0.459  0.690  1.449
0.319 4.429 0.000 0.839 1.191
0.058 0.870 0.387 0.976 1.024
-0.660 0.511
0.565 6.097 0.000 0.649 1.542
0.154 1.888 0.063 0.833 1.200
0.413 5.206 0.000 0.887 1.128
0.5

In Panel A, the result shows adjusted  $R^2 = 0.647$  for 2007, and declines to 0.549 for 2008, but is still strong. In Panel B, the 2007 year (pre-GFC) shows the coefficient for goodwill in the balance sheet (GWBS) is significant (Beta = 0.311, sig. = 0.000), whereas the coefficient for goodwill in the income statement (GWNI) is not significant (Beta = 0.176, sig. = 0.387). By comparison, Table 5, Panel B shows that in 2008 (during GFC) the coefficient of goodwill in the balance sheet (GWBS) is significant (Beta = 0.429, sig. = 0.000) and goodwill in income statement (GWNI) is also significant (Beta = 0.378, sig. = 0.017).

Since goodwill in the balance sheet is significantly related to share price in 2007 and 2008, respectively, it continues to have value relevance in both the pre-GFC year and during GFC year. Hypothesis 3 is supported in respect of the value relevance of goodwill in the balance sheet being evident during the GFC. Turning to goodwill in the income statement, this is not value relevant in the pre GFC year, but becomes value relevant in during GFC year. This latter result is contrary to the expectation in Hypothesis 3 that goodwill in the income statement would lose its value relevance during the GFC. It is inconsistent with Davis-Friday et al's (2006) finding that value relevance of earnings in Indonesia and Thailand significantly reduced during the Asian financial crisis. However, the study by Davis-Friday et al (2006) was based on data from pre IFRS regimes. It can be argued that under AIFRS and during the GFC in 2008, the financial crisis causes more companies to write down the net assets of their subsidiaries. This would result in greater incidence of goodwill impairment losses for consolidated accounts. Because of this greater goodwill impairment occurring in an economic downturn, it is found in Table 5 to have a significant effect on share price.



#### 6. Conclusions

This study has set out to contribute to the literature on the value relevance of goodwill accounting in financial statements by providing first time evidence on the effects of a medium term change in accounting treatment of goodwill wrought by AIFRS. It further gives evidence for the first time on the effects of the GFC on the value relevance of goodwill in the income statement relative to the balance sheet.

The conclusions from the results are first that goodwill accounted for in the income statement and balance sheet does not increase the explanatory power of market value under AIFRS compared to AGAAP. Value relevance of goodwill remains equally high under both regimes, inferring that the controversial changes to goodwill accounting introduced by AIFRS (which have been deemed by IASB to be conceptually superior for economic decision making), have not achieved their purpose. The second conclusion is that the economic life of the asset, goodwill, could be estimated by the market under AGAAP, as reflected in evidence of the value relevance of the age of goodwill since acquisition. But under AIFRS, where the carrying amount of goodwill is assessed annually for impairment, age since acquisition is no longer a fact valued by the market. The third conclusion is that goodwill in the balance sheet has high value relevance during the GFC as is hypothesised, whereas goodwill in the income statement did not lose its value relevance (as occurred under GAAPs during the Asian financial crisis), because of the high incidence of impairment losses recorded during the GFC.

Practical implications of this study are first that the AASB's adoption of goodwill accounting requirements in AASB 3 Business Combinations and AASB 136 Impairment of Assets have not produced benefits in terms of improved relevance of reported financial statement numbers for use by securities analysts and shareholders over the 3 years since AIFRS adoption. The rendering of radical reform to goodwill accounting in 2005 with evidence of little subsequent impact on financial statement users, points to the bigger question of whether the AASB (and possibly the IASB) should ease back on the pace of revisions to areas of group reporting under AIFRS because the costs to corporate preparers may be unjustified due to evidence of a lack of improvement in value relevance of 'bottom line' numbers to users since AIFRS were adopted.

As an illustration of a case in point, there have been further complex revisions to accounting standards affecting group reporting and accounting for goodwill since the period of the data used in this study. AASB 3 Business Combinations was reissued, and AASB 127 Consolidated and Separate Financial Statements was revised in March 2008, corresponding to IFRS/ IAS standards. These changes became effective for financial years commencing on or after 1 July 2009. The reissued AASB 3 Business Combinations allows a choice of methods for measuring the initial amount of goodwill, where a new subsidiary is less than 100% owned. This choice arises from valuing the non-controlling interest at acquisition date. If non-controlling interests are valued at the fair value of net assets of the non-controlling entities, then goodwill is recognised in group accounts in relation to both the parent's interest and non-controlling interests. But if non-controlling interests are valued at the proportionate



share of the fair value of the subsidiary's net assets, then goodwill in the group accounts is only recognised for the parent's interest, not for non-controlling interests. Whether the revisions to AASB 3 and AASB 127 will result in significant incremental value relevance is highly questionable. Yet these revisions, driven by IASB, are costly to implement in Australia and other countries adopting them.

A limitation of this country-based study is that the results, while theoretically generalisable, cannot be statistically generalised to companies operating in other countries' socioeconomic environment, including code law countries and those where company ownership is more concentrated (government or family control) and governance structures differ (two-tier boards). At a conceptual level, Holthausen and Watts's (2001) study raise several limitations of the value relevance model. They criticised the model because it used costless information, has no information asymmetry, no growth option, no abandon option, no conservatism, no economic rent and a linearity assumption. Hence, readers should be cautious about the drawback of value relevance models when interpreting the results of this study.

In respect to further research, there is a substantial body of findings on the value relevance of GAAPs and IFRSs. An opportunity exists for meta-analysis research to be performed across prior empirical studies to compare various aspects of the impacts of IFRS against other accounting regimes.

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#### Glossary

AASB: Australian accounting standard board.

AGAAP: Australian generally accepted accounting principles.

AIFRS: Australian international financial reporting standards.

ASX: Australian stock exchange.

GFC: Global financial crisis.

IASB: International accounting standards board.

IFRS: International financial reporting standards.



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