

# The Association between Goodwill Amortisation and the Dividend Payout Ratio

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## ABSTRACT

In Australia, from 1988 to 2004, amortisation of purchased goodwill to the income statement over a maximum twenty year period was mandatory. By contrast, accounting for identifiable intangible assets was completely unregulated. There was an incentive for certain acquirers to allocate much of the takeover purchase price towards identifiable intangible assets and away from purchased goodwill, so as to avoid the mandatory goodwill amortisation. One reason for this opportunistic action may have been to maximise the payment of franked dividends under Australia's (then) newly introduced dividend imputation tax system. However, we find no significant association between the acquirer's pre-bid dividend payout ratio and the percentage of takeover purchase price later allocated towards identifiable intangible assets. The percentage allocation decision - with respect to takeover purchase price - does not appear to have been significantly influenced by a desire to maintain or increase the dividend payout ratio under imputation. None of

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our control variables are significant except for the target's pre-bid investment opportunity set which is only significant using one of our three proxy measures for this variable (the earnings-to-price ratio).

**Keywords:** Accounting Policy Choice, Dividend Payout Ratio, Goodwill, Identifiable Intangible Assets, Intangible Assets, Purchased Goodwill

**JEL Classification:** M410

## 1. Introduction

The aim of this paper is to assess the extent of the allocation of purchase price toward identifiable intangible assets (hereafter IIAs) and thus away from purchased goodwill, during the lifetime of approved accounting standard AASB1013: *Accounting for Goodwill* in Australia (1988-2004). We also aim to assess whether the once-off accounting policy choice at acquisition is systematically influenced by the acquirer's pre-bid dividend payout ratio within the context of a dividend imputation tax system where the majority of resident individual shareholders tend to demand high payout ratios (Peirson et al., 1998, p.429). As Peirson et al. (1998, p.429) make clear: "An obvious implication of the imputation system [introduced on 1 July 1987] is that many resident investors will prefer that companies distribute imputation credits by paying the maximum possible franked dividends". We also aim to empirically discriminate between two competing perspectives on differences in the percentage of purchase price allocated to IIAs: the *information-signalling* and *opportunism* perspectives of positive accounting theory (Holthausen & Leftwich, 1983; Watts & Zimmerman, 1986, 1990; Holthausen, 1990). We study a unique and interesting time period in Australia (1988-2004) when accounting for purchased goodwill was highly regulated but accounting for IIAs was unregulated (James, 2010). This allows us to see what types of choices are made in this particular accounting environment. Interestingly but coincidentally, the first financial year this accounting regime applied (the financial year ending 30 June 1988) was also the first financial year of dividend imputation. Both Holthausen & Watts (2001) and Ramanna (2008) argue that movements to fair-value accounting can increase opportunism when the fair values are unverifiable with respect to active market trading prices. With respect to assets where there is no active traded market or reliable market price, a movement to fair-value accounting is then essentially a move to an unregulated accounting environment. Significantly, the unconstrained

nature of accounting for IIAs during our sample period allows us to observe the accounting choices made freely by firms in the absence of external restriction upon this area of their activities.

In Australia, the former AASB1015: *Acquisitions of Assets*, in force throughout this study's sample period (1988-2004), stipulated the accounting treatment of all assets acquired and required that all identifiable assets be recorded at their cost, and, where necessary, adjusted to fair values where these assets materially departed from cost. Where the acquisition price exceeded the fair value of the identifiable net assets acquired, the resulting balance was deemed to be purchased goodwill which had to be accounted for in accordance with the former AASB1013 (James, 2010).<sup>1</sup> From 1988 to 2004, under AASB1013, purchased goodwill was subject to strict and mandatory amortisation to the income statement over the period in which the benefits were expected to arise, which in no case could exceed twenty years. During this time period there was no equivalent accounting standard for IIAs (Wyatt, 2005; James, 2010).<sup>2</sup> Since there are significant practical difficulties in measuring certain IIAs, and in separating IIAs from goodwill, managers of acquirers used the relative freedom available to them under AASB1013/1015 to allocate purchase price toward IIAs and away from purchased goodwill (Wines & Ferguson, 1993; Whittred et al., 2000; Wines et al., 2007; James, 2010).<sup>3</sup> This was done, in some cases at least, so as to avoid mandatory goodwill amortisation (Wines & Ferguson, 1993; Whittred et al., 2000; James, 2010). High goodwill amortisation, for certain firms, may limit their continued ability to pay high dividends since under corporate regulations (Section 201 of Corporations Law as at 1998) dividends may only be paid out of profits and out of Retained Earnings (Peirson et al., 1998, p.420 and fn. 2, p.420). The dividend clientele preferring high dividends for tax reasons under the dividend imputation tax system (primarily resident

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<sup>1</sup> The use of the pooling of interests method was prohibited by AASB1015. There is no comparable standard to AASB1015 presently in Australia but its key content has now been subsumed within AASB 3 (*Business Combinations*) and AASB 138 (*Intangible Assets*).

<sup>2</sup> In 2005 IAS38: *Intangible Assets* (named AASB 138 in Australia) first came into effect in this country. IAS38 defines intangible assets as "an identifiable non-monetary asset without physical substance". Under IAS38 intangible assets now have a mandatory amortisation requirement. For more details on IAS38 see Deegan (2005).

<sup>3</sup> The phrase "away from purchased goodwill" in this context reflects the fact that purchased goodwill is defined by accounting standards as the mathematical residual of purchase price (at fair values) minus fair value of the net assets acquired. Therefore, a greater dollar allocation to IIAs means a lesser dollar allocation to purchased goodwill assuming that the dollar allocation to target net tangible assets remains unchanged.

individual shareholders who receive a franking credit for the amount of company tax deemed to have been paid on the profits out of which the dividend was declared) may well have put pressure upon acquirers to keep profits high and goodwill amortisation low. The imputation tax system was extended to Australian superannuation funds on 1 July 1988 (Peirson et al., 1998, p.427). Since they were thereafter taxed at a flat rate of 15% of income they too would tend to prefer high payouts of franked dividends for tax reasons.

Empirical evidence suggests a rise in the mean dividend payout ratio in Australia after the introduction of dividend imputation. Callen et al. (n/d) find that the dividend payout ratio in Australia rose rapidly during the period 1985-86 to 1990-91 and that over this period mean real dividend per share rose by 38%. Furthermore, Nicol (1992) finds that for a sample of over 400 of the largest Australian listed companies the median dividend payout ratio rose from 31% in 1985 to 50% in 1990. The median ratio was an even higher 63% in 1990 for the Top 100 companies based on market capitalisation.

Based on a sample of 35 acquisitions of Australian listed targets by Australian listed acquirers, spanning the 1988 to 2004 period, we find that the average (median) percentage of the takeover purchase price allocated to IIAs is a high 21.07% (1.75%).

Our results show that the percentage allocation to IIAs is not significantly related to the acquirer's pre-bid dividend payout ratio (contrary to our prior expectations). Control variables often used in studies of opportunistic accounting policy choice, namely the acquirer's pre-bid rate of return on assets (hereafter ROA) and the acquirer's pre-bid leverage, are also not significantly associated with the percentage allocation decision. We find a significant positive association between another control variable, the target's pre-bid investment opportunity set, and the percentage allocation to IIAs, which is consistent with the information-signalling perspective of positive accounting theory. However, this result only holds using one of our three chosen proxies for investment opportunity set, namely the earnings-to-price ratio. We subject our findings to a battery of tests and find that they are robust to several variable specifications. Nevertheless, a caveat on our findings is in order due to the small sample size.

Our study can be viewed as a first step to exploring the research agenda set out by Ritter and Wells (2006). Ritter and Wells (2006, p.861-862) proposed a suggested future research agenda as follows:

This study gives rise to several suggestions for future research. The recognition and disclosure of intangible assets is voluntary [as at the date of their writing]. Factors relevant to this accounting policy choice, including the decision to recognize particular intangible assets (as opposed to goodwill) and revalue them, require consideration.

The present paper differs from previous studies on a number of important fronts. First, by studying completed takeovers only, we provide a cleaner test by focusing on companies that we know in advance have a current-year choice to make, regarding the allocation of takeover purchase price. These companies will have higher average purchased goodwill and IIA balances than a broader sample of all companies listed on the Australian Securities Exchange (ASX). Therefore, the balances will be more likely to be material and the allocation decision more likely to have been given detailed consideration. We also avoid the case where “sticky” accounting policies for goodwill and IIAs, over time impact on the integrity of data drawn from more than one observation per takeover. Secondly, by using only pre-bid accounting data to measure our independent variables,<sup>4</sup> we are also able to overcome the endogeneity problem because pre-acquisition accounting variables are less likely to be influenced by the acquisition accounting policy choices made, as well as by the very decision to go ahead with the acquisition. Lastly, the much longer sampling interval in our study<sup>5</sup> adds to the reliability of inferences drawn, gives us insight into the pervasiveness of observed phenomena over time, and allows us to investigate any intertemporal changes in managerial incentives underlying the allocation of the acquisition price.

The remainder of the paper is structured as follows. Section 2 offers a Literature Review; Section 3 presents the theoretical framework and research hypotheses; Section 4 provides the research model and variable definitions; Section 5 presents and analyses the data; and Section 6 discusses the results. Finally, Section 7 concludes the paper.

## 2. Literature Review

Clinch (1995) summarises the US and UK evidence up until 1995 on the value-relevance of reported goodwill as follows: (a) there is no consistent

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<sup>4</sup> This contrasts with, for example, Grinyer et al. (1991) who use post-acquisition leverage in their tests.

<sup>5</sup> The sampling period in prior Australian studies is much shorter in comparison. For example, the sampling period in Matolcsy & Wyatt (2006) is only eight years, 1990-1997.

evidence of a stronger or weaker association between equity values and goodwill than between equity values and non-current tangible assets; (b) the association between goodwill and equity values only seems to exist outside manufacturing industries; (c) the association between equity values and goodwill is not as strong as that between equity values and IIAs; and (d) there is no consistent evidence of any association between share returns and goodwill amortisation.

Based on US data, Churyk (2005) finds no significant difference in the strength of the associations “purchased goodwill with market value of equity” and “book equity less purchased goodwill with market value of equity”. Churyk (2005) argues that this finding is consistent with the value-relevance of purchased goodwill and the move by the American Financial Accounting Standards Board (FASB) in 1999-2001 to purchase accounting and away from pooling accounting. However, in subsequent years, where book net assets minus market value of equity is negative (defined as “impairment condition”), the association between the interaction of purchased goodwill less amortisation with the impairment condition and the market value of equity is significantly negative. The coefficient is -2.02 for the first year after acquisition and -4.54 for the second year. This suggests that the absolute value of share returns is positively associated, under impairment conditions, with the absolute value of (previously recorded) purchased goodwill. This finding supports the overpayment theory put forward by Australian researchers Bugeja and Gallery (2006). Acquirers, on average, cannot later generate the rate of return on the purchased goodwill that they had previously expected to earn at the acquisition date.

The US and Australasian evidence suggests that managers use the *rate* of amortisation of goodwill and IIAs (Coombes et al., 1997; Bradbury et al., 2003) and the goodwill write-off (Henning et al., 2004) to signal to the capital market the actual rate of decline in the economic value of intangibles (Holthausen & Leftwich, 1983; Holthausen, 1990; Bartov & Bodnar, 1996; Boone & Raman, 2001). Goodwill and IIAs generally have more uncertainty about the future cash flows that they will generate than do tangible assets, and there is likely to be a higher degree of information asymmetry between firm insiders and firm outsiders in relation to the value of goodwill and IIAs. Therefore, information signalling by informed managers to less well informed firm outsiders is likely to be more important for goodwill and IIAs than it is for tangible assets. It is not surprising that managers use the rate of amortisation of these intangible assets to signal real declines in economic value of

these assets to relatively less informed firm outsiders. However, despite the above result, the US evidence indicates no significant association between the goodwill amortisation charge and share returns (Clinch, 1995; Whittred et al., 2000; Jennings et al., 2001; Moehrle et al., 2001; White et al., 2003). This is somewhat surprising as although the charge is mandated by accounting standards and the maximum time period for amortisation is also mandated firms still have discretion regarding the rate of amortisation where it is above the minimum mandated rate. Jennings et al. (2001) argue that goodwill amortisation 'adds noise' to the financial reporting system since earnings before amortisation explain significantly more of the share price variation than do earnings after amortisation. White et al. (2003, p.526) go so far as to say that goodwill amortisation is a "non-event" which has no "real consequences". However, it is hard to justify White et al.'s statement once information signalling is taken into account. Perhaps the goodwill amortisation charge in aggregated form is too messy since it is largely a function of mandated accounting rules and many firms do amortise using the minimum annual rate permitted by the standards.

We now move on to consider the Australian evidence. Based on Australian data for the period 1993 to 1997, Wyatt (2005) finds that share returns are strongly positively associated with IIAs (book value) but only marginally positively associated with purchased goodwill (book value). The significance of the goodwill result, however, depends upon model specification.

Bugeja & Gallery (2006) find that purchased goodwill is value-relevant. However, when purchased goodwill is divided up into: (a) current and previous two years and (b) four or more years old, the older goodwill is found not to be value-relevant. These authors suggest two explanations: (a) the older purchased goodwill is converted over time into ordinary net profits from operations of the firm and/or (b) there was overpayment in the original takeover and it takes the equity market several years to verify this. The authors are unable to distinguish empirically between these two explanations but suggest that the second explanation has to be taken seriously.

Matolcsy & Wyatt (2006) document that from 1990 to 1997, for Australian firms with high *underlying* intangible assets, capitalisation of IIAs is significantly associated with: (a) higher analyst following; (b) lower absolute analyst earnings forecast error; and (to a lesser extent) (c) lower analyst earnings forecast dispersion. This suggests real and favourable economic consequences if flexibility is permitted in the

area of accounting for IIAs. This flexibility existed in Australia prior to International Financial Reporting Standards (IFRS) adoption in 2005 but does not presently exist.

Ritter & Wells (2006) show that, on average, the current book values of IIAs and purchased goodwill are imputed into Australian share prices (beyond the effects of current period income). Furthermore, these authors find that the book value of IIAs, but not purchased goodwill, is associated with future income. The first finding of the value-relevance of IIAs is consistent with the evidence in Matolcsy & Wyatt (2006) that analyst forecast accuracy increases with IIA capitalisation. The value-relevance of IIAs beyond current-period income supports Collins et al. (1999) who find that asset values are an important indicator of future performance especially where current income is very low relative to future permanent income. For firms already reporting high current period income, asset values can signal the permanence of this higher income.

Ritter & Wells' (2006) second finding of an association between the book value of IIAs and future period income, rules out the argument that the Australian share market *mechanistically* takes the book values of IIAs and impounds them into share prices. However, the finding that purchased goodwill (book value) is *not* associated with future income is consistent with the overpayment for goodwill theory (Henning et al., 2000; Churyk, 2005; Bugeja & Gallery, 2006). This result is also consistent with Wyatt (2005) who reports that the value-relevance of goodwill is unstable and highly sensitive to model specification.

James et al. (2008) examine whether takeover bid premium is affected by the change in the accounting standard for purchased goodwill in Australia. The issuance of AASB1013 in 1987 effectively took away the discretion afforded to management in the accounting choice for purchased goodwill. Based on information signalling and opportunistic theories of accounting policy choice, they argue that constraining the accounting choice in purchased goodwill will work towards reducing acquirer firm value and thus the level of bid premium paid. Their results show that the issuance of AASB1013 did appear to be correlated with a statistically significant decline in the median (but not the mean) Australian bid premium. Unconstrained (i.e. unregulated) accounting policy choice for purchased goodwill does seem to be regarded as a valuable real option for managers, although this could be due to either opportunism or information-signalling.

In summary, prior research from both Australia and overseas suggests that firms prefer to capitalise both IIAs and purchased goodwill if permitted under the accounting standards. There are doubts whether purchased goodwill is value-relevant as it does not appear to be associated with future income and hence it may often reflect overpayment. Purchased goodwill minus amortisation times the impairment condition (book net assets below market value of equity) is negatively associated with the acquirer's market value of equity even just one year after the acquisition date and this negative association grows stronger thereafter (Churyk, 2005). Older goodwill that is four or more years out from the acquisition date is most probably not value-relevant (Bugeja & Gallery, 2006). Capitalised IIAs, on the other hand, are unmistakably value-relevant and associated with future income; they also help analysts to provide more accurate estimates of firm value. This suggests that information-signalling is likely to be a major factor in explaining firms' decisions to allocate a high percentage of purchase price to IIAs although opportunism cannot be totally ruled out.

By contrast, capitalisation of purchased goodwill is unlikely to be consistent with information-signalling for many firms as capitalised purchased goodwill does not seem to be associated with future income (Ritter & Wells, 2006). Such capitalisation in Australia during the sample period probably represents (in most cases) either opportunism or an altruistic/risk-averse approach to accounting policy choice where firms choose to conform to the "standard interpretation" of AASB1013<sup>6</sup> simply because it is the standard interpretation. Information-signalling theory would support reclassification of purchased goodwill to IIAs where the IIAs are assumed to be positively associated with expected future income. However, in Australia during our sample period, opportunism theory *prima facie* supports the same action. We attempt to empirically distinguish between the opportunism and information-signalling theories in our tests.

The extant empirical evidence suggests that firms avoid, where and whenever possible, goodwill and IIAs amortisation except for those classes of IIA which have a useful life limited by legal factors (on this latter point see Coombes et al., 1997). Why managers appear eager to avoid goodwill amortisation remains somewhat of a mystery given that this amortisation does not appear to be significantly associated with share

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<sup>6</sup> That is, capitalisation of all or most of the purchase price minus fair value of net tangible assets differential as purchased goodwill.

returns. As Whittred et al. (2000) suggest managers' revealed behaviour in this area is probably due to contracting and/or information-signalling reasons. As we have mentioned, a high goodwill amortisation charge may restrict the ability of firms to satisfy tax clienteles which prefer the maximum possible payment of franked dividends under Australia's dividend imputation system. This would include resident individual investors and (from 1 July 1988) resident superannuation funds taxed at only 15%. Goodwill amortisation charges worsen a company's interest coverage ratio which may have negative debt contracting implications (Whittred et al., 2000). Information-signalling ability may have been reduced by mandatory amortisation for goodwill or IIAs over twenty years, because this fixed rate (5% per year) prevents firms from using a lower rate of amortisation even where economic circumstances would support the lower rate.

Before proceeding to the next section we will briefly review some international research findings on accounting for purchased goodwill under the IFRS impairment test regime (adopted in Australia in 2005). Studies under the SFAS No. 142 regime in the U.S.A., which is an impairment test regime, are also relevant. Li and Sloan (2011) study the exploitation of technical discretion under SFAS No. 142 by NYSE, AMEX, and NASDAQ companies over the 2003-09 period. They find that there is a significant frequency of cases where management defers recognition of goodwill impairment losses to future years, and this has negative flow-on effects on the integrity of the accounting results and the share market prices.

We introduce the theoretical framework in the next section. The discussion there leads into our sole research hypothesis H1.

### **3. Theoretical Frameworks and Hypothesis**

We test two competing theories that explain differences in the proportion of purchase price allocated to IIAs: the information-signalling<sup>7</sup> and opportunism perspectives of positive accounting theory.

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<sup>7</sup> Information-signalling can be viewed as a subset of efficient contracting (it is hard to imagine a set of efficient contracts where information-signalling is ruled out or frowned upon) and hence, as far as this study is concerned, these two perspectives collapse into one. Under the efficiency perspective of positive accounting theory, managers select ex ante, in consultation with other contracting parties, the set of accounting policies that simultaneously minimizes agency costs, including the residual loss, and therefore maximises firm value (Watts & Zimmerman, 1990).

Under the opportunistic perspective (Watts & Zimmerman, 1978, 1986, 1990; Holthausen & Leftwich, 1983), managers act opportunistically ex post to transfer wealth to themselves and away from shareholders (bonus plan hypothesis), or to shareholders and away from debt-holders (debt-equity hypothesis). Because it is not possible or cost-effective ex ante to specify how wealth will be distributed among the contracting parties, under all possible future states of nature, the possibility of ex post opportunistic behaviour will remain.

Under the information-signalling perspective (Holthausen & Leftwich, 1983; Holthausen, 1990), managers select accounting policies so as to signal expected future cash flows to a relatively less informed capital market. Under this view, the percentage allocated to IIAs is likely to be a positive function of the target's and the acquirer's investment opportunity sets (IOS). If the target's and/or acquirer's IOS is large, relative to the assets-in-place, other things being equal, the acquirer is more likely to prefer to classify the purchase price primarily as IIAs so as to avoid mandatory goodwill amortisation (under AASB1013) which does not reflect any actual economic value decline.

Opportunism and information-signalling can be distinguished empirically. Under the opportunistic perspective, all acquirers, regardless of IOS, but especially those with poor prior performance and/or high leverage, would prefer to allocate a large percentage of the purchase price to IIAs so as to avoid goodwill amortisation and thus to opportunistically manage profits upwards (Wines & Ferguson, 1993; Scott, 2003). However, under the information-signalling perspective, *only* those acquirers acquiring targets with large IOS where intangible asset value is material will prefer this allocation method (Anderson & Zimmer, 1992). To enable us to discriminate between information-signalling and opportunism explanations, acquirer's dividend payout ratio; acquirer's prior performance; acquirer's pre-bid leverage; and acquirer's and target's pre-bid IOS are used as either experimental or control variables in our regressions. This leads to the following research hypothesis which is based on the opportunistic perspective of positive accounting theory:

*H1. The percentage of the takeover purchase price allocated to IIAs is positively associated with the pre-bid dividend payout ratio of the acquirer.*

Significantly, empirical support for H1 would indicate that the opportunism argument holds. Control variables based on either the

opportunism perspective or the information-signalling perspective are discussed later in this section.

For H1, the argument is that, with dividend payout ratios which are “sticky downwards”, firms which regularly pay high dividends will prefer to maintain such dividends after the acquisition (Copeland & Weston, 1988, p.576-578; Peirson et al., 1998, p.421-422; Brealey et al., 2004, p.431-438; Parrino & Kidwell, 2009, p.579-580). Shareholders interpret stable and increasing dividends as a sign from corporate management that managers’ inside information suggests strong future profitability for the firm. By contrast, a dividend cut or omission is interpreted as “bad news” about future earnings prospects and so these tend to be avoided whenever possible. The introduction of the imputation tax system for dividends in Australia in 1987 (which eliminates the “double taxation” of dividends) suggests an extra motivation to maintain or increase dividend payout after the acquisition: most resident individual shareholders demand the payment of high franked dividends under the imputation tax system (Peirson et al., 1998, p.429). Given that mandatory goodwill amortisation charges “bite into” reported profits in the year of the acquisition, as well as in subsequent years, we hypothesise that firms with high dividend payout ratios will aim to minimise the percentage allocation of takeover purchase price allocated to purchased goodwill. They can do this by maximising the percentage allocation of the takeover purchase price to IIAs (which were not required to be amortised during this study’s sample period). Onesti and Romano (2012) find evidence that not writing off goodwill as an impairment charge is positively associated with dividend payout. In the Netherlands, Lau (2013) reports that dividend payout ratio is inversely associated with growth opportunities.

Opportunism arguments find support in Daley (1985), who finds that Australian firms reacting negatively to the mandatory amortisation requirement of the non-binding professional standard AAS18 *Accounting for Goodwill* in 1984 (the provisions of this standard were essentially taken up into AASB1013) had lower interest coverage ratios than those that did not react negatively.

Pavletich (1989) reports that firms were more likely post-AASB1013 to obtain valuations of trademarks, patents and other IIAs that are outside the scope of the goodwill standard. Furthermore, there are more instances under AASB1013 (compared to AAS18) of firms revaluing non-depreciable assets such as land and investments arising out of acquisitions presumably so as to minimise the corresponding amounts

allocated to purchased goodwill. Both of Pavletich's (1989) findings are *prima facie* consistent with both opportunism and information-signalling explanations and so do not help us to distinguish between the two.

Anderson & Zimmer (1992) find that Australian firms with high "economic goodwill" post-AASB1013 were more likely than firms with lower "economic goodwill" to use the transitional provision of AASB1013 to write goodwill off as an extraordinary item. However, in the pre-AASB1013 period, such high economic goodwill firms were more likely to retain goodwill as a non-current asset on the balance sheet. Thus, information signalling considerations tended to predominate for these firms pre-AASB1013 but opportunism considerations predominated in the post-standard period (James, 2005, 2010). Clearly the intentions of the standard-setters appear to have been thwarted in practice by a number of firms, post-AASB1013, as the transitional provisions were designed to be a temporary ad hoc concession rather than a recommended treatment.

Gore et al. (2000) find that debt contracting (i.e. opportunism) is a significant factor influencing UK firms' decisions to write goodwill off immediately in their financial statements. Grinyer et al. (1991) find that the percentage of purchase price allocated to purchased goodwill<sup>8</sup> for a sample of UK firms is significantly negatively related to post-acquisition leverage, consistent with opportunism. Acquirers with high leverage prefer not to classify a high percentage of the purchase price as purchased goodwill because, under UK accounting standard SSAP No. 22 (1984, rev. 1989), this was immediately written off against reserves and hence reduced book equity.<sup>9</sup>

Coombes et al. (1997) produce results consistent with information-signalling but not opportunism. They find an inverse relationship in Australia between growth opportunities and the amortisation rate for IIAs, consistent with the information-signalling perspective. Furthermore, those IIAs with legally limited lives, such as patents, are

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<sup>8</sup> We use the same dependent variable as Grinyer et al. (1991) except in the fact that they classify the allocation into only purchased goodwill or other target net assets whereas we introduce a third category: allocation to IIAs.

<sup>9</sup> However, Wong & Wong (2001) argue that this study suffers from a correlated omitted variables problem because IOS was not included as an explanatory variable in the test. Furthermore, pre-acquisition leverage should have been used instead of post-acquisition leverage to overcome the endogeneity problem. We have addressed the two concerns of Wong & Wong (2001) in this paper which may be viewed as a follow-up study to Grinyer et al. (1991).

more likely to be amortised than those without a legally limited life, such as trademarks which also supports this perspective. A debt contracting variable is not significantly associated with the rate of IIA amortisation.

Wyatt (2005) reports that Australian firms' capitalisation decisions with respect to IIAs over the period 1993-1997 are, given the firm's *underlying* intangible assets, a positive function of technology strength and the ability of the firm to appropriate investment benefits, and a negative function of the length of the technology cycle time. These results support the findings of Coombes et al. (1997) and are consistent with information-signalling explanations. Leverage is significantly positively associated with IIA capitalisation in all sample years, consistent with opportunism. However, contracting and signalling variables explain only a small percentage of total variation in IIA capitalisation as compared to variables capturing the underlying economics of the intangible assets. The coefficient of determination is 3% for the specification including only the signalling, operating, and contracting variables but rises to 13% for the specification that includes all of the independent variables.<sup>10</sup>

In Singapore, Tan (2001) studies the goodwill accounting policy choice permitted by the original version of IAS22: *Business Combinations* (1987)<sup>11</sup> and reports a significant association between the level of human capital specificity of the chief executive officer (CEO) and the goodwill accounting policy choice in the predicted direction. Tan (2001) argues that information-signalling is the primary determinant of the purchased goodwill accounting policy choice. The information being signalled is the incremental value derived from the human capital of the CEO or, more specifically, the firm's investment in that value. Through additional robustness testing, she is also able to conclude that the result is unlikely to be due to opportunism.

#### 4. Research Model and Variable Definitions

To test our research hypothesis, we run the following basic regression model:

$$PERCENT_i = a_0 + a_1 DPR_i + e_i \quad (1)$$

<sup>10</sup> Wyatt (2005) defines signalling very narrowly to refer only to the cases where firms signal at the time of an IPO or new debt and equity issue. However, in our view, *every* capitalization of IIA in an unregulated environment (because it reflects a choice) is a signal by definition.

<sup>11</sup> Under the original version of IAS22, as applicable in Singapore in the year 1996, purchased goodwill could either be capitalised and amortised or written off directly against reserves.

The dependent variable is the percentage of takeover purchase consideration allocated to IIAs (PERCENT). The sole independent experimental variable is: DPR, the pre-bid dividend payout ratio of the acquirer measured as ordinary dividends paid (year t-1 interim dividend) and proposed (year t-1 final dividend) by the acquirer in financial year t-1 divided by net profit after tax in financial year t-1. Lastly,  $e$  is an independent and identically distributed error term. For this study “year  $t$ ” is defined as the first year in which the successful takeover is fully accounted for in the consolidated financial statements of the acquirer which is not necessarily the same year as contains the takeover announcement date.

The first four control variables added to the basic model in some regression specifications are as follows: ROA, the (pre-bid) rate of return on assets of the acquirer measured as net profit after tax in financial year t-1 divided by the average of total assets at the end of t-2 and t-1; DEBT, the (pre-bid) total liabilities divided by (pre-bid) total shareholders' equity of the acquirer as at the end of year t-1; and IOSTG and IOSACQ, the pre-bid investment opportunity sets of the target and acquirer company at the end of year t-1 respectively.

By using *pre-bid* accounting data to measure our independent variables, we are also able to minimise the endogeneity problem because pre-acquisition accounting variables are less likely to be influenced by the acquisition accounting policy choices made as well as by the very decision to go ahead with the acquisition.

For the ROA control variable, the argument is that firms with poor prior performance can least afford the reduction in consolidated post-takeover profits that mandatory goodwill amortisation creates. Therefore, they prefer to classify a large percentage of the purchase price to IIAs primarily so as to avoid goodwill amortisation. This creates a *negative* association between allocation to IIAs and prior performance.

For the DEBT control variable, firms with high leverage, other things being equal, will be closer to technical breach of accounting-based terms contained in their debt contracts. Ramanna (2008) points out that prior evidence from Dichev & Skinner (2002) suggests that whilst leverage is not necessarily a good proxy for the probability of a debt covenant breach, it is a good proxy for the costs of a debt covenant breach. Hence leverage is the proxy for contracting costs used in Ramanna (2008) as well as in the present study. Ratios such as interest coverage and debt-to-income are made directly worse by mandatory goodwill amortisation and hence highly levered firms may prefer to allocate a larger percentage of purchase prices to IIAs so as to increase

reported profits. Other ratios usually used in debt contracts such as debt-to-equity are also made worse by mandatory goodwill amortisation since the reduced profits reduce end-of-period book shareholders' equity and hence increase debt-to-equity and debt-to-assets. Although intangible assets are usually not included in the asset base to compute leverage, mandatory goodwill amortisation is not typically added back to reported profits for the purpose of assessing compliance with accounting-based debt contract terms (Whittred et al., 2000). Therefore, based on the opportunism perspective, a *positive* association is expected between percentage allocation to IIAs and pre-bid leverage. The motivation in classifying a large percentage of purchase prices as IIAs is simply to avoid goodwill amortisation. Information-signalling is *not* involved under the opportunism perspective (which also applies for H1 and the ROA control variable based upon that perspective).

The three proxy measures we consider for investment opportunity set are: (a) market-to-book value of assets at the end of year t-1, where the market value of assets is the sum of the market value of equity and total (book) liabilities; (b) market-to-book value of equity at the end of year t-1; and (c) earnings-to-price at the end of year t-1, with earnings per share computed as net profit after tax for year t-1 divided by the average number of ordinary shares outstanding as at end of year t-1 and t-2. For the first two measures, high values of these variables are indicative of high IOS whereas, for the third measure, the opposite is the case.

In some of our expanded regression specifications we introduce further control variables. Because of degrees-of-freedom concerns in this small sample size study all of these control variables never appear in the same regression equation. We control for auditor quality since high quality audit firms can advise clients on how to best structure their accounting policy choices so as to produce outcomes that are both favourable financially to the firm and can be defended on theoretical grounds should they later be challenged (Watts and Zimmerman, 1979). Therefore, acquirers with high quality auditors, having access to the audit firm's knowledge base and reputational capital are more likely to challenge the "standard interpretation" of AASB1013 and allocate more of the purchase price to IIAs. We define the "standard treatment" under AASB1013 as reporting the full "purchase price minus fair value of target net tangible assets" differential as purchased goodwill on the consolidated balance sheet and then amortising this complete amount

to the income statement over 20 years.<sup>12</sup> Auditor quality is proxied, alternately, by the traditional Big “N” versus non-Big “N” dichotomy (BIG “N”); by the natural log of audit fees (AUDITFEE); and by non-audit services fees divided by audit fees (NAS/AUDITFEE).

Other control variables used in certain of our regression specifications are: size of the acquirer (ACQSIZE) and the target (TGSIZE), both measured by the natural logarithm of the market value of common equity at t-1; and the number of successfully completed acquisitions of subsidiaries and businesses by the acquirer during t (NUMBER). We control for acquirer firm size (ACQSIZE) and the number of successfully completed acquisitions by the acquirer in financial year t (NUMBER) since larger and highly acquisitive acquirers are more likely to have a larger knowledge base about alternative acquisition accounting policy choices and make use of non-standard interpretations of AASB1013. Also, firm size is a standard proxy for political cost exposure that may impact upon acquisition accounting policy choices (Watts & Zimmerman, 1978, 1986, 1990; Holthausen & Leftwich, 1983). To compute the variable NUMBER we include all subsidiaries first consolidated by the acquirer in year t regardless of whether they meet this study’s sample selection criteria or not.

We use Tobit regression because our dependent variable is bounded from below at zero and negative values for PERCENT are impossible. Note that our PERCENT variable is *not* bounded at the top. The value will exceed 100% if more than 100% of the takeover purchase price is allocated to IIAs. This can happen because takeover purchase price is net of liabilities of the target purchased whereas IIAs acquired is a gross figure not diminished by any liabilities acquired. In our sample the maximum value for PERCENT is 127.59% and there are two observations in total where PERCENT exceeds 100% (and one more equal to exactly 100%). Our PERCENT variable has 17 zero percent observations which are 48.57% of the total number of observations.

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<sup>12</sup> A typical example of the “standard treatment” is Toll Holdings Limited’s year 2001 acquisition of Finemore Holdings. In this acquisition, Toll reported consideration paid of A\$119,906,000, fair value of net assets acquired of A\$79,164,000 and *Goodwill on Acquisition* of the residual A\$40,742,000 (A\$119,906,000 minus A\$79,164,000) in the footnotes to the *Statement of Cash Flows* in its 2001 accounts. It classified A\$Nil of the purchase consideration as IIAs. In the *Intangible Assets* footnote, this *Goodwill on Acquisition* duly appeared as an equal dollar increase in the *Gross* (pre-amortization) *Goodwill* balance. Toll conformed to the AASB1013 and “textbook” measurement rule for purchased goodwill. For example, purchased goodwill, according to Schroeder et al.’s (2005, p.322) textbook, is “the excess of total fair value [paid] over the fair value of identifiable net assets [acquired]”.

## 5. Data

A complete listing of Australian takeovers from 1 January 1990 to 30 June 2004 was sourced from SDC Platinum<sup>13</sup>, which provides details on takeover announcement dates; target and acquirer names; target delisting dates; acquisition offer price(s) including formal price revisions; percentage of shares held by the acquirer prior to and after the takeover; and percentage of shares sought in the takeover. Takeover data prior to 1990 were sourced from the ASX annual publication *Takeovers in Australia*. Financial data were obtained from the Australian Graduate School of Management (AGSM) Annual Reports Microfiche Series and the *Datanalysis* database. Data on consideration, fair values of assets/liabilities acquired (including IIAs), and purchased goodwill were obtained from the footnotes to either *Statement of Cash Flows* or *Controlled Entities* of the acquirer. Share prices were obtained from the *Australian Financial Review* and Datastream.

To be included in the sample, we require both the target and acquirer to be listed on the ASX and have complete financial and share price data available. Mining companies (acquirers and targets) were excluded from our sample consistent with prior published and unpublished Australian studies (Bugeja & Walter, 1995; James, 2005, 2010; James et al., 2008). We include finance companies but exclude mining companies since the products and services offered by finance companies can be differentiated, and hence for finance companies there can be goodwill.

Our final sample consists of 35 successful acquisitions covering the period 1988 to 2004 (inclusive) where either (a) purchase consideration and net assets acquired class totals (including IIAs) information was available for each individual subsidiary acquired during the year; or (b) 90% or more of the total consideration paid in acquisitions during the year was paid to acquire the subsidiary in question. In those cases where between 90% and 99.99% of purchase consideration paid during the year was used to purchase the subsidiary in question, all assets and liabilities acquired, including IIAs and purchased goodwill, were mathematically "allocated" by the researchers to the takeover under consideration.

The final sample is small. This is partly due to the exclusion of mining companies and the requirement that both acquirer and target be

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<sup>13</sup> <http://dmi.thomsonreuters.com/OnDemand/DealsAndPrivateEquity?gclid=CL7gjbniwiLoCFeRKpgodfXoAvA>

Australian and listed. However, the main reason for the small sample size is that although consideration, net assets acquired and goodwill always are disclosed on a per subsidiary basis, individual asset and liability class totals, including IIAs of the target, are often *not* disclosed for each subsidiary purchased.

The benefits of our restrictive sample selection criteria are that we can explain and evaluate accounting policy choice *on a per-takeover basis* rather than on the gross basis of all successful takeovers made by a given acquirer in a given financial year. Furthermore, by studying completed takeovers only, we provide a cleaner test by focusing on companies that we know in advance have a current-year choice to make regarding the allocation of takeover purchase price. These companies will have higher average goodwill and IIA balances than a broader sample of all companies listed on the ASX. Therefore, the balances will be more likely to be material and the allocation decision more likely to have been given detailed consideration.

Table 1 provides descriptive statistics for the full sample. The average (median) percentage of the takeover purchase price allocated to IIAs (PERCENT) under AASB1013 is 21.07% (1.75%). Our finding is consistent with the observation that during the “unregulated period” of 1988-2004, when no accounting standard covered IIAs, firms frequently allocated large dollar amounts to IIAs immediately at acquisition (Wines & Ferguson, 1993; Whittred et al., 2000; Wyatt, 2005). These dollar values were, either partly or in total, amounts that the standard interpretation of AASB1013 suggested should have been properly allocated to purchased goodwill. When corporate governance standards improved after 2000 and Australian accounting became the focus of international attention just prior to the country’s acceptance of IFRS in 2005 it is significant that the percentage allocation to IIAs began to decline. For the overall 1988-2004 period the average percentage allocation is 21.07% whereas, for the 1988-2000 period, the average percentage allocation is a substantially higher 24.15% (not reported in tables).

The mean (median) dividend payout ratio for the sample acquirer firms in the financial year immediately preceding the recognition of the takeover is 57.42% (55.85%). Unlike with the PERCENT distribution there is little evidence of a skewed distribution for this variable. The relatively high mean reflects the existence of Australia’s dividend tax imputation system which was in place throughout the study’s sample period. Under this system the taxpayer/ shareholder receives a tax credit with respect to a franked dividend equal to the amount of corporate tax

paid on the profits out of which the dividend was distributed (Peirson et al., 1998, p.427-435). Two firms had negative dividend payout ratios. This indicates that dividends were still being paid by these firms in the face of current-period losses (out of three current-period loss firms) which points to the downward “stickiness” of dividends. Only one firm in the sample paid a zero dividend. Four firms had a dividend payout ratio exceeding 100% which is possible since a firm may legally pay dividends out of Retained Earnings as well as out of current-period profits.

Table 1 Descriptive Statistics

	Mean	Median	Maximum	Minimum	Std. Dev.
AUDITFEE (\$'thousands)	15679.91	388.00	340000.00	13.00	64248.03
BIG “N”	0.89	1.00	1.00	0.00	0.32
IOSACQ <sub>3</sub>	-0.09	0.07	0.18	-5.55	1.00
IOSTG <sub>3</sub>	-0.23	0.08	0.66	-11.96	2.15
DEBT	151.42	98.38	1335.63	7.83	227.50
ACQSIZE (\$'millions)	1304.45	510.58	7330.00	0.95	1769.36
TGSIZE (\$'millions)	284.08	80.57	2528.70	4.20	529.95
NUMBER	2.00	1.00	9.00	1.00	1.70
PERCENT	21.07	1.75	127.59	0.00	35.67
DPR	0.57	0.56	5.54	-5.29	1.36
ROA	5.56	6.07	21.06	-47.46	11.84
NAS/AUDITFEE	123.58	73.17	699.13	7.69	165.14

Note. DPR, the pre-bid dividend payout ratio of the acquirer measured as ordinary dividends paid and proposed by the acquirer in financial year t-1 divided by net profit after tax in financial year t-1; ROA, the return on assets, is measured as net profit after tax in financial year t-1 as a percentage of average total assets at end of t-2 and t-1; Big “N” takes a value of 1 if the acquirer firm was audited by a BIG ‘N’ auditor and zero otherwise; IOSACQ3 and IOSTG3 are the investment opportunity set of the acquirer and target company respectively, proxied for by the earnings-to-price ratio; DEBT is total liabilities as a percentage of total shareholders’ equity as at the end of year t-1; ACQSIZE and TGSIZE are the size of acquirer and target firm size respectively, measured as the market value of common equity at the end of the financial year immediately prior to the takeover announcement date; AUDITFEE is the year t annual audit fees paid to the auditor of the holding company and its associated firms; NUMBER is the number of successfully completed acquisitions of both subsidiary companies and businesses made by the acquirer group of companies in financial year t relative to the takeover announcement month; NAS/AUDITFEE is non-audit service fees as a percentage of audit fees; and PERCENT is the percentage of the takeover purchase consideration allocated to identifiable intangible assets (IIAs).

Table 2 Pearson Correlation Matrix

	PERCENT	DPR	ROA	DEBT	TGSIZE	ACQSIZE	AUDFEE	BIG "N"	NAS/AUDFEE	IOSTG <sub>3</sub>	IOSACQ <sub>3</sub>
PERCENT	1										
DPR	-0.033	1									
ROA	.123	.349*	1								
DEBT	.025	-0.074	-0.058	1							
TGSIZE	-0.130	.056	-0.130	.388*	1						
ACQSIZE	-0.006	.406*	-0.006	.412*	.412*	1					
AUDFEE	.109	.030	.111	-0.002	-0.002	-0.002	1				
BIG "N"	.215	.354*	.144	.088	.088	.088	.088	1			
NAS/AUDFEE	.123	-0.059	.163	.198	.177	.382*	-0.088	.212	1		
IOSTG <sub>3</sub>	-0.488**	-0.015	-0.065	.321	.148	.033	.033	1	.083	1	
IOSACQ <sub>3</sub>	.109	.757**	.077	.040	.616**	.051	.051	-0.058	.078	-0.075	1

\*\* and \* represent significance at 1% and 5% levels respectively.

Moving on now to our control variables, the mean (median) after-tax ROA for the sample acquirer firms in the financial year immediately preceding the recognition of the takeover is 5.56% (6.07%), suggesting moderate to high average profitability. There were three sample firms with negative ROAs. Abdul Wahab et al. (2011, Table II, p.404), for their study of 1,022 Malaysian firm-years for 2001-2003, report a mean (median) before-tax ROA of 5.201% (5.274%). The fact that our acquirers appear marginally more profitable (even after-tax compared to the Malaysian firm-years' before-tax) may be due to our firms being acquirer firms only. Acquirer firms may be, on average, more profitable than non-acquiring firms.

Moving on to our second control variable, acquirer firms have a mean (median) leverage (DEBT) of 151.42% (98.38%). Our firms are also more highly levered than the Malaysian firm-years of Abdul Wahab et al. (2011). Abdul Wahab et al. (2011) report a mean (median) debt-equity ratio of 83.8% (26.1%). The suggested reasons for our (acquirer) firms being more highly levered than Abdul Wahab et al.'s (2011) firms are that acquirers are both more profitable and more ambitious than non-acquiring firms. This result may also reflect cultural conservatism among Malaysian senior managers which makes them less keen to take on high debt levels compared to Australian managers. Different accounting regimes in both countries could also explain some differences since the data is taken from the pre-IFRS era. In our study, the acquiring firm has a mean (median) market value of equity of A\$1.30 billion (A\$511 million), roughly five times that of the target firm (mean = A\$284 million; median = A\$81 million).

Moving on to the next control variables, the mean (median) measures of investment opportunity set for acquiring firms are, respectively, 1.41 (1.35), 21.70 (5.37), and -0.09 (0.07). For the target firms in our study, the mean (median) measures of investment opportunity set are, respectively, 1.10 (0.94), 1.17 (0.93), and -0.23 (0.08). For the first two measures a higher value represents a higher investment opportunity set whereas, for the third measure, the reverse is the case. The higher mean and median scores for acquiring firms for the first two measures, and lower mean and median scores for the third measure, suggest that these acquirer firms have a higher investment opportunity set than their target firms. This is expected as negative prior share returns both lead to a reduction in  $IOS_T$  and increase the likelihood of a potential target firm being the subject of a successful takeover bid.

NUMBER has a mean (median) score of 2.00 (1.00), with a maximum of nine acquisitions and a minimum of one acquisition completed by the acquirer in the acquisition year. Clearly, some acquirers are much more acquisitive than others, although this variable is influenced by acquisitions of less than 100% owned subsidiaries which may have been previously effectively controlled (but not consolidated) by the group. The median outcome is still to make only one acquisition per financial year. Of the 35 firms in the final sample, 19 (54%) involve acquirers that make only one acquisition during the financial year.

The average (median) firm pays an audit fee of A\$15.680 million (A\$388,000). The average (median) value for non-audit services fees divided by audit fees (a second proxy measure for audit quality with lower values representing higher quality) was 124% (73%). Clearly the minimum allowed value for this measure is 0% with no upper bound for maximum value. Our sample minimum was 12.95% while the maximum was 699.13% (i.e. non-audit services fees around seven times higher than audit fees). There were 11 out of 35 observations (31.42%) with values exceeding 100%.

A relatively high 88.57% of acquirer firms (median 100%) were audited by one of the big "N" auditors (BIG "N" represents higher audit quality). However, it is worth noting that this figure was much lower during the 1980s and the first two years of the 1990s compared to later in the sample period. The most recent sample acquirer firm audited by a non Big "N" auditor was the Datafast Telecom takeover of VivaNet (announcement date: 21 February 2001). For the Malaysian firm-years in Abdul Wahab et al. (2011, Table II, p.404), Big "N" averages 68.1% (median 100%). The Big "N"'s dominance of the Australian audit market grew significantly during our sample period (for better or for worse). The Big "N" dominance in Malaysia was nearly certainly less significant than in Australia during the 2001-2003 period.

## 6. Results

Pearson correlations in Table 2 show a high correlation between the IOS of the target firm ( $IOS_{T_3}$ ) and the percentage of takeover purchase consideration allocated to IIAs (PERCENT). The correlation coefficient is -0.488 and it is significant at the 1% level based on a two-tailed test. This result is consistent with the information-signalling perspective of positive accounting theory (Holthausen & Leftwich, 1983; Holthausen, 1990). However, the result is obviously inconsistent with opportunism.

We find no significant correlation between PERCENT and any of DPR, ROA, DEBT or IOSACQ. The insignificant coefficient for DPR is inconsistent with the findings of Onesti and Romano (2012) who find that the absence of a goodwill impairment charge is positively associated with dividend payout ratio. Opportunism does not appear to be strongly present in the data and it is unlikely that our Tobit regression will produce results supportive of our sole research hypothesis. Unsurprisingly, the size of the acquirer (ACQSIZE) is significantly positively correlated to the size of the target firm (TGSIZE) which is a common-sense result. The correlation coefficient is +0.412 and it is significant at the 5% level based on a two-tailed test.

There are some other interesting significant correlation coefficients revealed by Table 2. In fact only DEBT and AUDITFEE are significantly associated with none of the other variables. The finding for DEBT suggests that opportunism is not an important determinant of accounting policy choice at acquisition (PERCENT) nor is DEBT a major (opportunistic) determinant of any of the other variables such as profitability, dividend payout, choice of auditor, audit fees paid, non-audit service fees paid, etc.

We will first discuss significant correlation coefficients involving the study's sole experimental independent variable DPR. DPR and ROA are significantly positively correlated, which is not surprising as highly profitable firms will feel confident to pay higher dividends as a percentage of those profits. They will not be as concerned about a drop in profits which might later necessitate an unpopular cut or omission of dividends. The correlation coefficient is +0.349 and it is significant at the 5% level based on a two-tailed test. However, the correlation coefficient is not so high as to suggest the dividend payout ratio cannot provide any additional explanatory power beyond return on assets. The rule-of-thumb suggesting significant multicollinearity is a correlation coefficient exceeding 0.7 or 0.8. We also find that larger acquirer firms pay higher dividends probably due to less risk, higher retained profits, and a more stable set of past earnings figures. The correlation coefficient is +0.406 and it is significant at the 5% level based on a two-tailed test. Acquirers with a higher value for IOSACQ<sub>3</sub>, meaning a lower earnings-to-price ratio, also have significantly higher dividend payout ratios. The correlation coefficient is +0.757 and it is significant at the 1% level based on a two-tailed test. This result can be explained by firms with strong past earnings and dividend series having higher current share market prices. It is also consistent with high growth option firms

paying lower dividends, consistent with Lau's (2013) results for the Netherlands. Furthermore, under the Australian dividend imputation tax system, higher franked dividends are more valuable to most resident individual shareholders than are capital gains (Peirson et al., 1998, p.429) and hence high dividend payout ratios may well attract a share market price premium. For reasons of space limitations we will not discuss the other significant correlation coefficients (involving neither PERCENT nor DPR). These correlation coefficients are generally of the expected signs. For example, larger acquirers are both more profitable in accounting terms ( $r=+.516$ , significant at 1% level) and have higher average dividend payout ratios ( $r=+.406$ , significant at 5% level).

Table 3 Tobit Regressions

	1	2	3	4	5	6	7	8
DPR	-0.043 (0.963)			-0.0831 (0.488)	-.1647 (0.476)	-.1918 (0.541)	-.1952 (0.536)	-.1789 (0.574)
ROA		2.1344 (0.181)		2.6040 (0.154)	1.7051 (0.445)	.9938 (0.668)	1.1017 (0.633)	1.0409 (0.657)
DEBT			-0.0048 (0.929)	.0096 (0.859)	.0074 (0.970)	.0323 (0.870)	.0177 (0.929)	.03989 (0.846)
IOSTG <sub>3</sub>					-.0937 <b>(0.021)</b>	-.1002 <b>(0.020)</b>	-.0981 <b>(0.022)</b>	-.1001 <b>(0.020)</b>
IOSACQ <sub>3</sub>					.3861 (0.868)	1.7528 (0.584)	1.2612 (0.696)	1.6535 (0.614)
ACQSIZE						.1066 (0.198)	.0896 (0.283)	.1024 (0.246)
TGFSIZE						-.0540 (0.458)	-.0618 (0.394)	-.0544 (0.455)
AUDITFEE							.0383 (0.436)	
NAS/ AUDFEE								.0079 (0.894)
Constant	-.01322 (.920)	-.16588 (0.362)	-.0088 (0.950)	-.1640 (0.441)	-.0474 (0.910)	-1.2656 (0.427)	-.9729 (0.545)	-1.1969 (0.473)
N	35	35	35	35	30	30	30	30
Log L	-27.24	-25.82	-27.24	-25.54	-18.08	-17.18	-16.87	-17.17
Left censor	17	17	17	17	14	14	14	14
Sig in brackets								

Table 3 provides the Tobit regression results with the percentage of takeover purchase consideration allocated to IIAs (PERCENT) as the dependent variable.

The first specification includes only the explanatory variable relating to the research hypothesis H1, i.e. the dividend payout ratio (DPR). Specifications two to four include only variables, experimental and control, which relate to the opportunistic perspective. Specifications 2 to 8 all include at least one control variable. Specifications 7 and 8 both have the largest number of independent variables. Because of degrees-of-freedom concerns there is no specification which includes all the independent variables. In any case, since BIG "N", AUDITFEE and NAS/AUDITFEE are all proxies for the theoretical construct of auditor quality, there is no need to include two or more of these variables in the same specification.

Inconsistent with the opportunism perspective, the table shows that the acquirer's pre-bid dividend payout ratio (DPR); the acquirer's pre-bid return on assets (ROA); and the acquirer's pre-bid leverage (DEBT) are not significant determinants of the percentage of purchase consideration allocated to IIAs (PERCENT). Research Hypothesis H1 is *not* supported by the data. Avoiding mandatory goodwill amortisation in order to maintain the dividend payout ratio does not seem to be a major determinant of the initial percentage allocation decision.

The estimated coefficient on IOSTG is negative and significant in all specifications but only when the third nominated proxy measure, i.e. the earnings-to-price ratio, is used to measure investment opportunity set (as reported in Table 3). The significance disappears when the regression incorporates factor analysis based on all three investment opportunity set proxies. (Tobit regression results using the other two proxy measures and those using a factor analysis comprising all three measures are not reported in the tables.) The consistently significant result for IOSTG<sub>3</sub> is consistent with the information signalling perspective and prior empirical research (Coombes et al., 1997; Tan, 2001; Wong & Wong, 2001; Wyatt, 2005). That is, there is a higher percentage allocation of purchase price to IIAs for targets with higher IOSTG. Firms with higher growth opportunities are likely to have more patents, etc. However, the pre-bid IOS of the acquirer (IOSACQ) is not a significant determinant of the percentage of purchase consideration allocated to IIAs (PERCENT). Therefore, the IOSACQ of the acquirer is of limited relevance for the percentage allocation decision. Obviously this would be because the IOSACQ of the acquirer may not reflect the IOSTG of the target, especially where the acquirer and the target are in different industries

or the acquirer is a diversified conglomerate, and logically it is target IOSTG that should drive acquirer accounting choice with respect to the acquisition of that target. Our findings with respect to the IOSACQ and IOSTG variables clearly support our decision to reduce the sample size by studying takeover accounting choice *on a per takeover basis* rather than on an acquirer-year basis (see our earlier comments on this point). Table 2 reveals that the Pearson correlation coefficient between these two variables is only -0.075 and it is *not* significant.

With the robust exception of  $IOSTG_3$ , none of our control variables are statistically related to PERCENT and this includes the three auditor quality proxy variables. Although there are a number of significant univariate correlations between variables in our data set (Table 2), with one exception these all disappear in our multivariate regressions (Table 3). We are still relatively uninformed about the factors which influence the percentage allocation decision. Avoiding mandatory goodwill amortisation so as to maintain dividend payout ratios in a dividend imputation tax system environment does not appear to be one of those factors.

### 6.1 *Supplementary Analysis*

In supplementary univariate regression analysis (results not tabulated), we find that the percentage of purchase price allocated to IIAs (PERCENT) is positively but not significantly correlated with the acquirer's subsequent abnormal returns ( $r=+0.088$ ,  $p=0.354$ , Adj.  $R^2=-0.013$ ), suggesting that there is minimal overpayment for IIAs and that they may contribute to positive excess returns for the acquirer after the bid. Overall, the supplementary analysis supports the study's primary regression results.

## 7. **Conclusions**

This study investigates the determinants of the once-off accounting policy choice that a successful acquirer makes in the acquisition year to classify takeover purchase price as target net tangible assets, IIAs and/or purchased goodwill. Until 2004 in Australia, the accounting policy choice for IIAs was totally unconstrained. The study also attempts to assess whether the percentage allocation to IIAs is a positive function of the acquirer's pre-bid dividend payout ratio.

We find that many companies classified a large percentage of the takeover purchase price as IIAs during our sample interval (1988-2004):

the mean (median) percentage is 21.07% (1.75%). The mean percentage for the 1988-2000 sub-period is even higher at 24.15% (not reported in the tables). The result suggests that “political costs”, in the form of regulator and media disapproval, can have a significant effect on accounting policy choice on a time-series basis.

Regression results show that the percentage allocation to IIAs does not appear to be determined by traditional opportunism contracting variables such as acquirer pre-bid dividend payout ratio, acquirer pre-bid return on assets or acquirer pre-bid leverage. Although the  $IOSTG_3$  of the target is significantly positively related to the percentage of takeover purchase price allocated to IIAs, the  $IOSACQ_3$  of the acquirer is not. Furthermore, although the  $IOSTG_3$  variable is consistently significant across all model specifications, this result only holds when our third proxy measure for investment opportunity set, the earnings-to-price ratio, is used. The lack of significance for the acquirer’s pre-bid dividend payout ratio is somewhat surprising as resident individual shareholders (from 1 July 1987) and resident superannuation funds (from 1 July 1988) tend to prefer the maximum possible payment of fully franked dividends under Australia’s dividend imputation system. Nevertheless, caveats on all of the empirical findings of this study are in order due to our small sample size.

Our results indicate that *on average* acquiring firms were not abusing the discretion allowed to them under accounting standards (although abuse most certainly occurred in isolated cases). Future accounting standard-setting bodies may well want to take these findings into account especially in relation to the area of accounting for purchased goodwill and IIAs.

The implications for Asian scholars are as follows. When accounting in a given area is unregulated, we might hypothesise that efficient contracting or information-signalling or opportunism effects will predominate. This should be subjected to empirical testing. Studying accounting method choice for purchased goodwill and IIAs in the year of acquisition on a per-acquisition basis, as the present authors have done, is an unusual approach but it does mean that only acquisitive acquirers which purchase targets with non-zero intangibles and/or goodwill will enter the study’s sample. This method may only be suitable in markets with a large number of listed companies and where takeovers are frequent. We have also shown that accounting rules for purchased goodwill and IIAs must be studied as a package and not separately, because it is relatively easy for firms to reclassify asset balances from

one category to the other category. Furthermore, scholars should note that IFRS convergence may make it more acceptable to combine firms across multiple countries into a single sample.

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