Accounting for Goodwill in Australian Business Combinations:

Is there value to choose?

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Abstract

This research explores the empirical association between takeover bid premium and acquired (purchased) goodwill, and tests whether the strength of the association changes after the passage of approved accounting standard AASB1013 in Australia in 1988. AASB1013 mandated capitalization and amortization of acquired goodwill to the income statement over a maximum period of 20 years. We use regressions which assess how the association between bid premium and acquired goodwill varies in the pre- and post-AASB1013 period after controlling for confounding factors. Our results show that reducing the variety of accounting policy options available to bidder management after an acquisition results in no systematic reduction in the strength of the association between premium and goodwill, presumably due to alternative means of signalling available to managers after AASB1013.

1. INTRODUCTION

This research aims to investigate whether the option to freely choose goodwill accounting policy (removed by AASB1013: *Accounting for Goodwill* in 1988) is a valuable one for Australian acquiring firms. AASB1013 first applied to Australian companies in the financial year ending on or after 19 June 1988.[1] It reduced the number of acceptable goodwill accounting policies for purchased goodwill down to one. The mandated policy had the harshest income statement effects of the four most common accounting policies used in the pre-regulation period as documented by Gibson and Francis (1975). AASB1013 stated that the only acceptable accounting policy for purchased goodwill was capitalization as a non-current asset, followed by systematic amortization charges to the income statement over the period in which the benefits were expected to arise, which in no case could exceed 20 years.

Australian companies argued frequently in the 1980s and 1990s that AASB1013 was both *unrealistic* (the goodwill asset increases in value over time, not decreases) and placed them at a *competitive disadvantage* in world capital markets compared to bidders from countries with less harsh goodwill accounting rules (such as the US, UK, Germany, Singapore and Hong Kong).[2] More (less) harsh goodwill accounting rules are defined here as those with higher (lower) present value of combined amortization charges over the useful life of the goodwill, which will lead directly to lower (higher) present value of accounting profits over the same time interval. The arguments of these Australian companies have not been subjected to rigorous empirical scrutiny. To shed light on this question, we measure whether AASB1013 systematically led to a reduction in the strength of the association between bid premium and acquired (purchased) goodwill in the post-AASB1013 period.

The research question as to whether narrowing possible accounting choices for goodwill to one, and mandating the policy with the harshest income statement effects, imposed unfavourable economic consequences on acquirers can be best tested by using Australian data if a *time-series research design* (pre- and post- the standard) is used. All prior empirical studies - such as Choi and Lee (1991), Lee and Choi (1992), Dunne and

[1] For most Australian companies, this would be the financial year ending 30 June 1988. Note that Australia decided to follow the International Accounting Standards Board (IASB) set of accounting standards with effect from 1 January 2005. As a result, AASB1013 no longer exists. It has been replaced by AASB3: *Business Combinations*, which is the Australian version of IFRS3: *Business Combinations*. Systematic amortization of the capitalized acquired goodwill balance is not required by AASB3 (Leo et al. [2005]).

[2] See Choi and Lee (1991), Lee and Choi (1992), Davis (1992), Tabakoff (1994a), (1994b), (1994c), (1995), Porter (1994), Brown (1995), Clinch (1995), Lonergan (1995), Miller (1995), Whittred et al. (2000, pp. 238-248), and James (2005, chap. 1).

Ndubizu (1995) and Cheng et al. (1997) - use *cross-sectional research designs* where they assess whether goodwill accounting rules in a country that imposes less (more) harsh income statement effects are associated with higher (lower) bid premiums. Australia is a perfect test case for a time series study because Australia's goodwill standard imposed relatively more harsh income statement effects than the goodwill standards introduced in the UK and US in the 1970s and 1980s – namely APB Opinion No. 17: *Intangible Assets* (1970) and SSAP No. 22: *Accounting for Goodwill* (1984, rev. 1989), respectively [Porter (1994) and Whittred et al. (2000, p. 244)]. As a result, this study offers unique insights into the impact of a harsh goodwill accounting standard upon bid premiums that any study that might use US or UK data.

By forcing the selection of one accounting policy, we argue that AASB1013 may force companies away from an efficient contracting outcome. Using the *Information Signalling Perspective* of Positive Accounting Theory (PAT), AASB1013 appeared to restrict acquiring firm managers from using goodwill accounting choice to signal expected future net cash inflows arising from intangible assets to the relatively less informed capital market (Holthausen and Leftwich [1983, p. 112], Holthausen [1990, pp. 208-209], Bartov and Bodnar [1996], Coombes et al. [1997], and Boone and Raman [2001]). Whether this actually occurred needs to be subjected to rigorous empirical testing which is the purpose of this paper. Also relevant is the *Opportunistic Perspective* of PAT. Under this perspective, managers of acquiring firms might have regarded AASB1013 negatively since it limited their ability to increase reported group profit in the post-acquisition period through a non-amortization policy (Watts and Zimmerman [1986], [1990], Anderson and Zimmer [1992], Whittred et al. [2000, pp. 238-248], Fields et al. [2001], and Emanuel et al. [2003]).

We hypothesize that both perspectives (Information Signalling and Opportunism) may have worked jointly to create dissatisfaction among managers with AASB1013 and led to a reduction in the association of the goodwill numbers with real variables under management control (i.e., the premium). The Information Signalling and Opportunism Perspectives appear to offer predictions that are *reinforcing* in this instance because AASB1013 reduces both the number and range of accounting policy choices available and also in most cases leads to reductions in both reported group income and leverage.[3] We

[3] Gibson and Francis (1975) document the most common accounting policies used in the unregulated reporting environment in Australia. They studied the annual reports of Melbourne Stock Exchange (MSE) listed companies for financial year 1974. 273 companies responded to the survey and 88 of these companies had made an accounting policy choice concerning acquired goodwill in their most recent consolidated financial statements. The most common accounting practices observed by Gibson and Francis *at acquisition date* were

chose to select a sample of takeover bids for study because acquired goodwill is created initially by the takeover process (in accounting terms, it is reduced in future years by the amortization charges) and so acquired goodwill is larger and more economically important for recent successful acquirers than for the general population of all firms.

Based on a sample of 261 Australian takeovers which involved listed targets over the time interval 1981 to 2000, we find at best marginal evidence that takeover bid premiums are systematically related to the goodwill standard. After controlling for confounding factors, the premium is at best marginally positively related to the cross-product of acquired goodwill and a time period dummy that takes a value of one for the post-AASB period and zero otherwise. Goodwill as a stand-alone term is significantly negatively related to premium in both time periods. Taken together, these findings indicate the goodwill accounting standard has not significantly reduced the strength of the association between goodwill and premium.

As a result we conclude that, contrary to the arguments of leading Australian companies during the 1980s and 1990s, AASB1013 has not imposed material economic consequences upon Australian acquirers or reduced their competitiveness in the global market for corporate control. The results do not support the general sentiments that AASB1013 imposed negative cash flow consequences upon Australian acquiring firms (Porter (1994) and Whittred et al. [2000, pp. 244 and 247]). Assuming that reported goodwill numbers were used to signal expected future net cash inflows in the pre-AASB1013 period (Information Signalling Perspective), our findings hint at the availability of alternative means of signalling for creative Australian managers in the post-AASB1013 period. In other words, the intent of the standard was fairly easily circumvented. Wines and Ferguson (1993) document that the percentage of Australian firms systematically not amortizing identifiable intangible assets (IIA) increased systematically and gradually over the period 1985 to 1989.[4]

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immediate write-off against consolidated reserves (33 out of 88 or 37.5%), immediate write-off against consolidated profits, (16 out of 88 or 18.2%), periodic write-offs against consolidated profits, i.e., capitalization with systematic amortization (14 out of 88 or 15.9%), periodic write-offs against consolidated reserves, (8 out of 88 or 9.1%), write-offs at the directors' discretion against consolidated reserves, and write-offs at the directors' discretion against consolidated profits. The method later mandated by the non-binding professional standard AAS18 (1984) and AASB1013, that is capitalization and systematic amortization to the income statement, was used by only 16% of companies. Thus, as might be expected, the unregulated accounting environment was characterised by significant diversity, and the method mandated by AASB1013 was used by well below a majority of companies pre-regulation. However, as predicted by the Information Signalling Perspective, accounting choices in the unregulated environment do not seem random, and four 'common' policies clearly predominate. We might argue that these four policies appear to be the ones the unregulated market was willing to 'accept' without imposing undue penalties on the companies involved.

[4] AASB1013 covers only *unidentifiable intangible assets*, in other words only goodwill. AAS18: *Accounting for Goodwill* was released on 26 April 1984 [Whittred et al. (2000, p. 239)] by the Australian accounting profession, but was not legally binding. It contained essentially the same provisions as in AASB1013. There was no legally-binding accounting standard on IIA in Australia over the period 1985 to 1989 and so the non-

Acquirers could reclassify goodwill as IIAs at or after acquisition, and thus avoid the amortization charges imposed by AAS18/AASB1013 on goodwill. As a result it seems likely that AASB1013 did not achieve the objectives that the standard-setters had in mind for it when it was initially released, i.e., forcing the cost of acquiring intangible assets in acquisitions to be pushed through the income statement. Our results presented here offer additional empirical support for this assertion.

The remainder of this paper is set out as follows. Section 2 uses the Information Signalling and Opportunism Perspectives of PAT to develop the study's central Research Hypothesis, Section 3 discusses the Research Model, Section 4 describes the Data, Results are presented in Section 5, and Section 6 contains Conclusions.

2. HYPOTHESIS

AASB1013 mandated the capitalization of acquired goodwill and systematic amortization to the consolidated income statement over a maximum period of 20 years. Prior to AASB1013, there was no legally enforceable accounting method in Australia for acquired goodwill. Actual accounting practices for acquired goodwill varied widely in this pre-regulation period (Gibson and Francis [1975], Carnegie and Gibson [1989], Goodwin and Harris [1991], and James [2005, chap. 1]). As noted in an earlier footnote, Gibson and Francis (1975) report that only 16% of Melbourne Stock Exchange (MSE) listed companies in financial year 1974 voluntarily used the accounting method of capitalization and amortization, the only permitted policy under both the professional standard AAS18 (1984) and the legally-binding Australian Accounting Standards Board Standard AASB1013 (1988) which followed it.[5]

Following the Information Signalling Perspective of PAT (Holthausen and Leftwich [1983, p. 112], Holthausen [1990, pp. 208-209], Anderson and Zimmer [1992], Bartov and Bodnar [1996], Coombes et al. [1997], Tan [2001], Boone and Raman [2001], Wong and Wong [2001], and Emanuel et al. [2003]), we argue that the option to maintain freedom in accounting policy choice in the acquired goodwill area is a valuable one for successful

amortization accounting policy for IIAs was acceptable under Australian law. The Exposure Draft ED49: *Accounting for Identifiable Intangible Assets*, was in place between 1989 and 1992, but non-binding (Whittred et al. (2000, pp. 248-249)].

[5] At the time of its release, the Australian Accounting Standards Board was known by its original moniker the Accounting Standards Review Board (ASRB) and so AASB1013 was originally known as ASRB1013. To avoid confusion the name AASB1013 is used throughout this paper to refer to the standard originally known as ASRB1013.

acquirers. Removing this option might have led managers to reduce the bid premiums that they were willing to pay, and otherwise value-enhancing takeovers might have been passed up.[6] Our reasoning is based on two perspectives found in PAT – Information Signalling and Opportunism.

The 'early research' that involved testing of PAT hypotheses – starting with Watts and Zimmerman (1978) and chronologically concluding around the time of Watts and Zimmerman (1990) – relied wholly or primarily upon the Opportunism Perspective. The Opportunism Perspective is derived from the modern theory of the firm, where stakeholders have incentives to negotiate a set of contracts delineating their relationship with the firm that minimizes the total sum of agency costs and thus maximizes firm value. These contracts include debt covenants and management compensation plans, which are often tied to key financial statement variables (Watts [1977] and Smith and Warner [1979]). Accounting policy choices, such as the accounting policy decision regarding how to account for goodwill, may impact upon the financial statement variables used to determine the entitlement of stakeholders to the firm's assets and profits under the contracts.

The logic underpinning the Opportunism Perspective is that because it is not cost-effective or possible to write contracts ex ante which determine precisely the distribution of payoffs ex post under all possible states of nature, some opportunistic behaviour ex post will always be possible.[7] As contracts ex ante cannot prevent all ex post opportunism, we expect that some ex post opportunism will remain (Emanuel et al. [2003]). Managers acting ex post opportunistically could use goodwill accounting policy choice in an unregulated environment to maximize the present value of profits-linked management compensation (Watts [1977], Watts and Zimmerman [1978], [1986], Healy [1985], Sloan [1993], and Whittred et al. [2000]) and/or to increase leverage and interest cover and thereby avoid technical violation of

[6] Extant academic evidence indicates that on average acquiring managers probably over-pay in takeovers. As a result, any accounting standard that restricts managers' willingness to pay might even be construed as advantageous to acquiring firm shareholders. We thank an anonymous reviewer of an earlier version of this paper for pointing this out. However, these findings apply only *on average* (in large samples) and are documented only ex post. In our opinion they say very little about whether an individual manager in any given takeover bid ex ante can reasonably be said to have offered too high a price. As Betton and Eckbo (2000) warn, use of average results from comparative statics tests to make global inferences about takeovers is dangerous (the who wins, who loses rhetoric) because comparative static tests fail to capture the *dynamic nature* of actual takeover bids where game theory seems most relevant. A high bid (e.g., Toll Holding's revised bid for Patrick Corporation in Australia in the first half of calendar year 2006) may seem foolish ex post but it might have been needed in the heat of the battle to either delay or ward off a rival bidder and/or to signal good intentions and commitment to target shareholders (and thus win over stubborn minorities). As such it can be viewed as part of the premium for control, a premium which may decline in value over time. For discussion of Toll's two bids for Patrick, see Ferguson (2006), Gluyas (2006), Creedy (2006) and Speedy, Stevens and Trounson (2006).

[7] Individuals are assumed under to be PAT to be rational expected wealth maximizers who always act as if guided by their own personal self-interest.

accounting-based debt covenant terms (Watts and Zimmerman [1978], [1986], Whittred and Zimmer [1986], Citron [1992a], [1992b], Smith [1993], Sweeney [1994], Cotter [1998], Whittred et al. [2000], and Fields et al. [2001]).

Studies supporting the proposition that managers of acquiring firms may reduce the level of bid premiums paid in order to avoid the subsequent reduction in the present value of management compensation caused by the goodwill amortization charge include Choi and Lee (1991), Lee and Choi (1992) and Aboody et al. (2000). In Crawford (1987) and Aboody et al. (2000), firms with higher debt to equity ratios and a higher probability of breaching the accounting-based terms contained in debt contracts are more likely to choose purchase instead of pooling.[8] Similar sentiments are echoed by Whittred et al. (2000, pp. 244 and 247) with regards to the mandatory accounting treatment imposed upon acquiring firms in Australia by AASB1013. They suggest that the imposition of this standard may have had indirect cash flow consequences for acquiring firms in the form of debt contracting costs - working possibly through the interest cover ratio - and artificial dividend payment restrictions.[9]

Under the Opportunism Perspective of PAT, mandatory goodwill amortization charges, which create unfavourable financial statement effects for both the consolidated income statement and the consolidated balance sheet, may lower the takeover bid premiums that rational, wealth maximizing managers are willing to pay. Goodwill amortization charges might also impact upon a firm's dividend policy because, under Section 254T of Part 2H.5 of the Australian Corporations Act 2001, dividends may only be paid "out of profits" (Whittred et al. [2000, p. 244] and Chan and Loftus [2003]).[10] This can be interpreted in line with the *Efficiency Perspective* of PAT (see Zimmer [1986], Whittred [1987], Watts and Zimmerman [1990], Mian and Smith [1990], Malmquist [1990], Whittred and Zimmer [1994], Whittred et al. [2000], Wong and Wong [2001], and Emanuel et al. [2003]) because AASB1013 may

[8] The pooling of interests accounting method allows for the balance sheet asset and liability amounts of target and bidder to be simply added together, and as such no acquired goodwill or goodwill amortization amounts appear in the consolidated post-bid financial statements. The pooling option was removed completely in the US by SFAS No. 141 and No. 142 (2001) and by the IASB in IFRS3 (2004). Pooling was never an acceptable accounting policy in Australia.

[9] The interest cover ratio (typically Earnings Before Interest and Tax divided by Interest Expense) will be made worse by goodwill amortization charges (they reduce EBIT). Cotter (1998) establishes the importance of interest cover constraints in Australian bank term loan contracts during the 1990s. She finds that interest cover ratio was a *continuing constraint* (a fall below the minimum allowed level of the ratio in any year constituted a breach of the loan contract) in 100% of the Australian bank term loan contracts (private debt) that she studied. Further, no formal adjustment appears to be made to reported profit by lenders to take into account accounting policy choices and new accounting standards.

[10] Earlier versions of the Australian corporations' legislation in Australia (1981 to 2000) contained an equivalent regulation.

artificially restrict dividend policy below the most efficient level.[11] However, this Corporations Act provision, working jointly with AASB1013, also restricts manager's ability to manipulate dividend policy opportunistically in the short term because there is an additional enforced reduction in profit.

We now move on to discuss the implications of the Information Signalling Perspective of PAT for acquiring firm managers in the post-AASB1013 environment. Freedom in the area of goodwill accounting policy choice allows managers to select accounting policy so as to *communicate* (or *signal*) to the (relatively uninformed) capital market the future net cash inflows expected from the firm's intangible assets (Holthausen and Leftwich [1983, p. 112], Holthausen [1990, pp. 208-209], Anderson and Zimmer [1992], Bartov and Bodnar [1996], Coombes et al. [1997], Tan [2001], Boone and Raman [2001], Wong and Wong [2001], and Emanuel et al. [2003]). Specifically, acquiring firm managers may signal higher expected future net cash inflows through the adoption of a voluntary policy of capitalization without amortization for their acquired goodwill and IIA balances. If, at a later time, these same managers wanted to signal that expected future cash flows were now reduced, they could do this through either an immediate once-off write-down of their intangible assets, or an increase in the rate of systematic amortization applied to those assets (Coombes et al. [1997] and Tan [2001]).[12]

We argue that the reduction in accounting-related benefits associated with the passage of AASB1013 is an increasing function of the target's acquired goodwill balance (Choi and Lee [1991]). The higher the acquired goodwill balance, the larger (i) the mandatory amortization charges created by AASB1013 and the incremental reduction in earnings-based management compensation; (ii) the mandatory amortization charges created by AASB1013 and the incremental increase in the probability of technical violation of an accounting-based term in a debt contract; and (iii) the value of the real option to signal

[11] We thank an anonymous reviewer of an earlier version of this paper for pointing this out to us.

[12] A false ex ante signal given by goodwill accounting policy is costly to the signaller because once information about reduced cash flows flowing from the goodwill becomes available to capital market participants ex post, the adoption of an aggressive (i.e., non-conservative) accounting policy for intangible assets in those prior accounting periods could leave the firm and its auditors exposed to legal action. As Watts (2003, p. 209) states: "Shareholder litigation is another source of (reporting) conservatism in recent years. Litigation also produces asymmetric payoffs in that overstating the firm's net assets is more likely to generate litigation costs for the firm than understating net assets". While Watts' comments originally were made in the American context, hostile litigation has also been a historic feature of Australian commercial law history. Australia is classified as *Western common-law model* (not code law) by Ball et al. (2000, 2003) within the context of the earnings conservatism literature. This classification is consistent with high levels of litigation by shareholders against both management and auditors. In addition, independently of the prevalence and cost of litigation, the firm, its management, and its auditors are liable to suffer a loss of *long-term reputation capital* if a firm that suffers reduced cash flows is found to have adopted aggressive accounting policies in the years immediately prior to the known cash flow deterioration.

expected future cash flows arising from the acquired goodwill through a capitalization without amortization accounting policy.[13]

Under the Information Signalling Perspective, in the post-AASB1013 period the goodwill numbers that are reported are arguably less meaningful and less useful numbers, since their signalling properties are reduced and the probability that they are used for signalling is lower. Therefore, they should be less closely associated with premium, which is a real economic variable directly under the control of the acquiring firm managers. Under the Opportunism Perspective, mean bid premium and mean acquired goodwill may both fall post-AASB1013. However, we do not specify these two posited effects as research hypotheses since the impact of confounding factors on both bid premium and goodwill are likely to be simply too strong to make reliable inferences. Our sole research hypothesis is therefore based only upon the Information Signalling Perspective, and it is specified as follows:

Relative to the pre-AASB1013 period, in the post-AASB1013 period the bid premium is less significantly related to the acquired goodwill of the successful target.

In testing the above hypothesis, various determinants of the takeover bid premium, as suggested by theory and confirmed in prior papers, are controlled for. These are discussed in the next section.

3. RESEARCH MODEL

The basic research model used in this study is well accepted in the literature. It was first developed by Robinson and Shane (1990) and Choi and Lee (1991) and takes the following form:

$$PREMIUM_{i,t} = a_0 + a_1*POST87_{i,t} + a_2*POST87*GWILL_{i,t} + a_3*GWILL_{i,t} + e_{i,t}$$

[13] This last one is the most doubtful. Some might argue that the validity of a signal will not be a function of the amount being used as the signal but only a function of the 'on/off' status of the signal switch. We support this view. However where the amount of goodwill is clearly immaterial, regardless of the signal, we expect financial statement users to be unlikely to pay much attention to any signal that involves this financial statement item. As such managers, being aware of this, would be unlikely to use goodwill accounting as a signal where the goodwill amount is immaterial. So in a sense the value of the ability to signal goodwill (the value of the real option) is a positive function of the goodwill balance but, beyond a certain amount of goodwill, an incremental increase in goodwill might not increase the incremental value of the ability to signal.

where $PREMIUM_{i,t}$ is the takeover bid premium for firm i at time t. POST87 is a dummy that takes the value of zero for a pre-AASB1013 bid and one for a post-AASB1013 bid. The pre-AASB1013 period spans from 1 January 1981 to 30 June 1987 and the post-AASB1013 period is from 1 July 1987 to 31 December 2000 inclusive.[14] $GWILL_{i,t}$ is acquired goodwill for firm i in period t and $e_{i,t}$ is an independent and identically distributed error term relating to firm i and time period t.

Bid premium (PREMIUM) is calculated as the offer price minus target share price at the beginning of the month prior to the takeover announcement month, divided by the target share price measured as at that date, and then all minus the returns on the All Ordinaries Accumulation Index (AOAI) accumulated over the same returns interval used to compute the bid premium.[15] Where the offer price is partly or fully composed of ordinary shares in the acquirer, the consideration is measured using the acquiring firm's market share price at the beginning of the announcement month, following the procedure recommended by Taylor (1987).

The prediction of the model, as applied to the study's Research Hypothesis, is that the cross product term (POST87*GWILL) should have a statistically significant coefficient *that is of opposite sign to that for the acquired goodwill term*. Such a finding would be consistent with a "significant reduction in the strength of the association between goodwill and premium" in the post-AASB1013 period. The period dummy incorporates the effects of other factors that cause bid premium to vary systematically between the pre-AASB1013 and post-AASB1013 periods which are not related to the goodwill accounting rule contained in AASB1013.[16] No unambiguous prediction is made concerning the sign of the period dummy variable because there is no reason for us to expect bid premium to be systematically higher or lower on average in the period after AASB1013 for reasons unrelated to the goodwill accounting standard.

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[14] Since AASB1013 first applied to financial years ending on or after 19 June 1988, and the vast majority of Australian companies adopt a fiscal year ending 30 June, the most appropriate cut-off date for inclusion of the takeover in the post-AASB1013 period sub-sample is takeover announcement dates on or after 1 July 1987.

[15] Alternative measures of bid premium use target share price at the beginning of the takeover announcement month and at the beginning of the month two months prior to the announcement month are also computed. This allows for alternative lengths of target pre-bid *price run-up* to be included in the measured bid premium. Although not reported, using these alternative measures does not change the key results and conclusions of this paper.

[16] Apart from the worldwide stock market crash of October 1987, there are the worldwide recession, which began around 1989 and ended around 1991, and the rise in the use of poison pill schemes by target firms in the 1980s and into the 1990s (Comment and Schwert [1995]). However, the rise of poison pills in the 1980s and early 1990s seems to have been largely an American phenomenon which did not extend to Australia during this time interval. These factors are captured by three binary variables that take a value of one for takeovers during 1988-90, 1991-97, and 1998-2000 (respectively) and zero otherwise. Although not reported, including these time secular dummies in regression equations does not change the key findings and conclusions of this paper.

Acquired goodwill (GWILL) will to some degree reflect the average expected future abnormal earning power of the target (Choi and Lee [1991]). Due to problems associated with the empirical measurement of acquired goodwill, the *market-to-book ratio* (market price per share divided by book value of net equity acquired per share) is commonly used as its proxy, and we do the same.[17] Goodwill is defined in AASB1013 as purchase consideration (measured at market value) minus fair market value of identifiable net assets of the target acquired. We expect goodwill to be positively associated with market-to-book because bidders on average pay more for firms with a higher pre-acquisition market share price. Targets with high market-to-book ratios therefore on average expose the bidder to higher post-acquisition goodwill amortization charges. As a result market-to-book, whilst not an ideal proxy, we feel captures some of what we perceive as the relevant goodwill amount in this study, i.e., the amount that will later be subjected to mandatory amortization charges and so will be distorted and less useful for signalling post-AASB1013.[18]

However, one of the problems in using market-to-book to proxy for goodwill is that there are other factors which might systematically upon this ratio. These factors include accounting conservatism of the *conditional* and *unconditional* type (Basu [1997], Pope and Walker [1999], Ball et al. [2000], [2003], Ball and Shivakumar [2005], and Kung [2005]), the presence of growth options (Wong and Wong [2001]) and prior management inefficiency (Walkling and Edmister [1985] and Nathan [1988]). Walkling and Edmister (1985) and Nathan (1988), for example, argue that a significant and negative association should exist between the market-to-book ratio and bid premium based on *the removal of inefficient management hypothesis*. Their argument is that where there are prior management inefficiencies, the market value of the target's equity will be low relative to the book value of equity. Competition for such targets among rival bidding firms operating within a

[17] We could clearly identify the amount of purchased goodwill numbers arising from the acquisition directly from the bidder's first post-acquisition set of consolidated financial statements for 37 firms in the pre-AASB1013 period and 23 firms in the post-AASB1013 period. Although not reported, using this goodwill measurement rule yields similar results. Studies to use market-to-book ratio as a proxy for goodwill include Nathan (1988), Choi and Lee (1991), Lee and Choi (1992), Dunne and Ndubizu (1995), and Cheng et al. (1997).

[18] As long ago as 1967 Wyatt (1967) documented the *identification problem* for goodwill. By this he meant that premium and goodwill are actually simultaneously (jointly) determined by the bidder during the time that the bid price and bid price revisions (if any) are formalized. Offer price (and so premium) may be chosen so as to generate the desired goodwill number and so premium affects goodwill (as well as goodwill affecting premium). However, by using market-to-book as the goodwill proxy the endogeneity problem is avoided since market price and book value (the two components of market-to-book) are both pre-bid variables and so themselves cannot be affected by premium.

competitive market for corporate control will create a negative association between market-to-book and premium.[19]

Acquired goodwill (GWILL) is measured in this study as the target's pre-bid market price at the beginning of the month prior to the takeover announcement month minus the target's book net assets per share at the end of the financial year closest to the announcement date, divided by the former.[20] Since acquired goodwill is not accumulated over the same period as the bid premium, there is no obvious auto-correlation between bid premium and acquired goodwill (Choi and Lee [1991]).

Equation (1) is expanded to incorporate a number of variables that past studies have found to influence bid premium in systematic ways. Agency theory predicts that higher levels of managerial ownership (DIROWN) can better align the interests of shareholders and managers. The pre-acquisition share price of high agency cost firms is low, and so the bid premium is expected to be high (all else equal) reflecting the fact that firm value can most likely be increased under the bidder's management as agency costs are progressively reduced. The US evidence supports this (e.g., Ayres et al. [2002]) but not the Australian evidence (Bugeja and Walter [1995]). Therefore, no sign is predicted for DIROWN. DIROWN is the sum of the target directors' share ownership, direct and beneficial, divided by the total number of target firm's issued ordinary shares.[21]

The proportion of target's shares held by the bidder in the pre-bid period, coined as *toehold* in the literature, can significantly reduce the bid premium and is controlled for in the tests. Where the bidder has a large pre-bid holding, there is less information content in the bid as the target is required to inform the Australian Stock Exchange (ASX), on a continuous

[19] In the US institutional context, as it existed between 1970 and 2000 (inclusive), Robinson and Shane (1990) argue target management support for the bid had to be gained so that the 12 pre-specified criteria of APB Opinion No. 16 could be met. To gain target management support, this would in most cases necessitate offering a higher bid premium. Given that the accounting-related benefits of pooling were an increasing function of the market-to-book ratio, Robinson and Shane (1990) claim there is thus an accounting effect that supported a positive association between the market-to-book ratio and the bid premium during this period. However, this accounting effect is not expected to be present in Australia where pooling has never been an acceptable accounting option. This also leads us to conclude that the joint determination of goodwill and premium for the US market discussed by Wyatt (1967) will be less of a problem in Australia because the pooling-driven reason for premium to affect goodwill (reverse causation in our model) will not exist. In addition, we use market-to-book to proxy for goodwill and, as stated in earlier discussion, reverse causation and endogeneity cannot occur using this proxy because premium cannot affect pre-acquisition market-to-book.

[20] Deflation of both bid premium and acquired goodwill by pre-bid market price per share is consistent with Christie's (1987) arguments that the natural deflator in returns studies is the beginning-of-period price. We also compute two alternative measures of acquired goodwill, corresponding to the measures of bid premium. Qualitatively similar results (not reported) are obtained using these alternative measures.

[21] Information about non-director managerial ownership is not publicly available in Australia. We use the term DIROWN to denote this variable (meaning 'director ownership') but use the term 'managerial ownership' in the text to ensure consistency with prior studies which mostly use US data.

disclosure basis (since 1996), of any changes to its *substantial shareholder* details. The pre-acquisition share price will have factored in the probability of a future bid by a substantial shareholder. Consequently, the resulting percentage bid premium when it is paid will be lower, being computed using a higher base amount. Having a large initial holding in the target also means that fewer shares will be held by rivals prior to the bid. Therefore, a higher bid premium will not be needed to buy out rivals or recalcitrant minorities.[22] Walkling and Edmister (1985), Robinson and Shane (1990), Bugeja and Walter (1995), and Ayres et al. (2002) provide empirical support for a negative association between toehold and bid premium. TOEHOLD is the bidder's proportionate share ownership at the end of the financial year immediately preceding the takeover announcement date or the date attached to the ASX Additional Shareholders Information section of the last annual report.

Mode of payment (cash or shares) is another control variable used in the tests. Cash, as opposed to ordinary shares, is typically associated with a higher bid premium (Huang and Walkling [1987], Schwert [2000], and Lefanowicz et al. [2000]) as well as a higher probability of a successful bid outcome (Sudarsanam [1995]). There are three reasons. Firstly, share bids take longer to process and are more likely to lead to management resistance and/or a rival bidder (and so are non-preferred by bidders). Secondly, since firms are more likely to issue ordinary shares when their shares are over-valued (Myers and Majluf [1984]), bids that involve share payments will be received negatively by target shareholders.[23] Third in the US, unlike cash bids, share bids do not attract capital gains tax

[22] In Australia, hostile bids are extremely frequent and they are part of the Australian corporate culture, consistent with Australia's high score on the Individualism cultural dimension (see Gray [1988], [1992], Deegan [2000, chap. 6], Hofstede [2001], [2003], Baskerville [2003], Baskerville-Morley [2005], Otsuka and Smith [2005, p. 97], and James, Otsuka and Yee [2006]). Apart from a formal takeover bid, Section 611 of Part 6.2 of the Australian Corporations Act 2001 allows a 'creeping takeover' by the purchase of not more than three percent of ordinary voting shares every six months. A substantial but not controlling stake by one industrial company in another without the prospect of a takeover bid has historically been penalized by the Australian share market. We presume this is because it reflects unclear strategy on the part of the bidder and possibly lack of courage to follow-through with an actual bid. A well-known Australian example of this occurrence was Futuris Corporation's 21% stake in Incitec, a listed subsidiary of Orica. This stake could not be sold through regular trading on the ASX due to the thin-trading in Incitec shares (around 3,000 Incitec shares traded daily across Australia.) Early in calendar 2003 Orica bought back all of the Futuris-held Incitec shares in a private deal and the share prices of both Futuris and Orica rose substantially on the day deal finalization was announced. This suggests that the Australian market prefers the certainty of a hostile bid (with a clear success/ fail outcome) to the passive holding of a substantial (but not controlling) stake over a long time period. This factor furthers increases the frequency of hostile takeover bids in Australia.

[23] This partly explains why diversified logistics operator Toll Holding's first bid for stevedore Patrick Corporation in Australia in the second half of calendar 2005 was unsuccessful whilst its second, revised bid (which reduced the proportionate equity component and increased the proportionate cash component) was accepted by shareholders. The second bid even convinced Patrick Chairman Peter Scanlon and CEO Chris Corrigan (who had both held out strongly against the first bid) to relinquish their strategic minority stakes in Patrick shares thus allowing the bid to go ahead. For details of the two Toll bids for Patrick, see Ferguson (2006), Gluyas (2006), Creedy (2006) and Speedy, Stevens and Trounson (2006).

(Huang and Walkling [1987]). However, the Australian evidence shows no significant association between bid premium and mode of payment (Da Silva Rosa et al. [2000]) and the probability of a successful takeover outcome (Henry [2004]). This may be due to the deferral of capital gains tax associated with share-for-share exchanges, which is available in the US but not in Australia. Since the 'tax-neutrality' period, which was effective until 10 December 1999 (Henry [2004, p. 427]), incorporates all but one year of the present study's sample period, no prediction is made about the sign of the association between bid premium and mode of payment. CASH takes a value of one for cash only bids and zero for 'other' bids.

To the extent that the successful bidder is able to access the target firm's carry-forward tax losses through the bid, the bid premium will be influenced by such losses (Brealey et al., 2000).[24] A positive association is expected since there may be a higher probability of recognized tax losses being recouped more quickly under the bidder's management than under the pre-bid management. Presumably, the high recognized tax losses are due to prior inefficient management (Walkling and Edmister [1985], Nathan [1988], and Ayres et al. [2002]). To access the incremental tax losses, bidders may offer a higher bid premium to deter rivals. TL_NOTE is measured as that part of the Future Income Tax Benefit (FITB) created by tax losses, and not by timing differences, which is not recognized in the balance sheet of the target firm in the financial year prior to the takeover announcement date, divided by the book value of the target net equity in the same financial year.[25]

Target firm size is one of the major determinants of the probability of a successful takeover outcome. Extrapolating from the evidence of a positive association between the probability of success and bid premium (Walkling [1985], Franks and Mayer [1996], and Holl and Kyriazis [1996]), a positive association between bid premium and size is expected. SIZE is the target's market capitalization, measured as the product of share price and number of ordinary shares outstanding, at the start of the takeover announcement month. It is expressed in constant December 2000 Australian dollars using the Consumer Price Index published by the *Australian Bureau of Statistics*.

As in past studies, a major concern in this study is that the acquired goodwill term may be capturing more than one underlying theoretical construct including past management inefficiency, the presence of growth options, accounting conservatism, and the expected loss

[24] However, no prior study of which we are aware includes prior carry-forward tax losses as an explanatory variable in a regression designed to 'explain' bid premium. This is a unique contribution of the present study.
[25] Similar findings (not reported) are obtained when we use the that part of the FITB derived from tax losses (not timing differences) that is recognized in the target's balance sheet (T_LOSS).

of accounting-related benefits associated with the passage of AASB1013 (i.e., the 'accounting effect'). For this reason, another explanatory variable, prior target stock returns, has been included in the model. This variable has been widely used in the corporate governance literature to capture past management inefficiency. The inclusion of this variable will also help in determining whether any observed significant coefficient on the interaction of toehold and acquired goodwill (TOEHOLD*GWILL) is driven by past inefficient management or by other effects. Flowing from the removal of inefficient management hypothesis (Franks and Mayer [1996]), and the assumption of a competitive market for corporate control, a negative sign is expected for target's prior performance. RETURN is the three-year excess returns on the target firm's shares from a buy and hold strategy which concludes two months prior to the beginning of the takeover announcement month.[26]

To control for industry effects, we include a dummy variable, FIN, which takes a value of one for firms in diversified financial industries and zero otherwise.

4. DATA

A complete listing of Australian takeovers from 1 January 1990 to 31 December 2000 was obtained from the SDC Platinum, which also provides details on takeover announcement dates, target and bidder names, target delisting dates, acquisition offer price(s) including formal price revisions, percentage of shares held by the bidder prior to the takeover, percentage of shares sought in the takeover, and percentage of shares held by the bidder after the takeover. Takeover data for dates prior to 1990 were sourced from the ASX annual publications *Takeovers in Australia*, in conjunction with *Takeovers in Australia (1900-98)*, published by Financial Analysis Publications.

Only listed Australian targets were included so as to ensure availability of share price and annual report data. The bidder may be listed, unlisted, domestic, and, in some cases, foreign.[27] To ensure homogeneity of data, bids involving target and bidder firms in the extractive industries were excluded (Bugeja and Walter [1995]). Annual reports for the period after 1991 were obtained from the Connect-4 database. For the period prior to 1991,

[26] Qualitatively similar results (not reported) are obtained when we measure targets' prior performance as the one- and two-year excess returns on the target firm's shares.

[27] A foreign bid was included where the accounting policies allowed by the accounting standard operative in the bidder's country of origin at the time of the bid were essentially the same (defined only in terms of amortization required or not required, and ignoring the maximum time period requirement) as then existed in Australia. For example, a US bidder required to amortize acquired goodwill over 40 years under APB No. 17 was regarded as operating under equivalent conditions to an Australian bidder operating under AASB1013.

they were accessed from the Australian Graduate School of Management (AGSM) Annual Report Microfiche Series.

In this study, only bids where the bidder began with less than 50% of ordinary voting shares pre-bid and ended up with more than 50% after the bid are included. This is to ensure the subsidiary was consolidated in the bidder's consolidated financial statements in the year after the bid (following the guidelines in AASB1024: *Consolidated Accounts,* since replaced by AASB127: *Consolidated and Separate Financial Statements*) and that a first-time accounting policy choice in relation to acquired goodwill was made in the first post-bid year.[28] Where feasible, the *Controlled Entities* footnote in the bidder's immediate post-acquisition annual report(s) was studied to determine if consolidation was actually effected. Prior studies do not look to see whether consolidation was actually effected. They simply assume that if their database says 50% ownership was reached (not reached) by a bid then consolidation was (was not) effected. A more rigorous and exacting rule, that links back to the consolidation accounting standard, to determine whether a bid should be included in the final sample of takeovers, is a unique feature of the present study. We believe that this is a step forward for the empirical takeovers literature at least in countries where control, not ownership percentage, is the sole criterion for consolidation (which includes countries adopting International Financial Reporting Standards).

Application of our selection criteria resulted in a final sample of 127 pre-AASB1013 bids and 134 post-AASB1013 bids.

Table 1 provides a distribution of sample takeovers by the target firm's industry (Panel A) and the acquisition year (Panel B). The majority of target firms come from materials (38%), diversified financials (14.6%), food, beverage and tobacco (11%), real estate (8%), and media (4.6%) sectors. High takeover activities occurred in 1985 (10%), 1981 (10%), and 1987 (8.4%). In contrast, very few takeover announcements (24 in total or an average rate of 4.8 per year) occurred during the recession years, 1990 to 1994 (inclusive). The fact that very few takeovers occurred in the immediate post-AASB1013 period of 1990

[28] Under AASB1024: *Consolidated Accounts* (1990), since replaced by AASB127: *Consolidated and Separate Financial Statements*, the primary criterion to determine whether a subsidiary should be consolidated is *control*, not proportionate ownership interest. Thus, if a company owns less than 50% of the ordinary voting shares of a subsidiary, this subsidiary should still be consolidated if control exists. If there is no consolidation, then, by implication, there is no acquired goodwill balance and no post-bid amortization. Thus, all this study required to include a bid in the sample was evidence of post-bid consolidation of the target. For example, the Wesfarmers takeover of Bunnings in 1992 was included in the sample as, although Wesfarmers owned only 46.1% of the Bunnings ordinary voting shares *at the conclusion of its 1992 bid*, Wesfarmer's accounting policy for 1992 was to consolidate Bunnings because of the achievement of control (Wesfarmers Limited [1992, pp. 29 and 41]).

to 1994 could be due in part to the accounting rules of AASB1013 being sufficiently restrictive as to place a dampener upon takeover activity.

<Insert Table 1 here>

Table 2 reports the descriptive statistics for sample takeovers. The average bidder pays an excess bid premium (PREMIUM) of 47% over and above the target's share price taken as at the beginning of the month prior to the announcement month. The median premium paid is about 25%. The average acquired goodwill (GWILL) is -0.1797 with a median of -0.0366. The negative figures indicate that target firms tend to have book value of equity that exceeds the market value of equity. However, the standard deviation is very large (0.8421) and still nearly 50% of sample firms have positive acquired goodwill. A median negative acquired goodwill for the sample does not imply that there was a negative median market-to-book ratio for all Australian firms during the sample period, since takeover targets are likely to be underperformers relative to the market as a whole.

<Insert Table 2 here>

The recognized tax loss assets variable (T_LOSS) has a mean (median) of less than one percent (zero), reflecting the fact that recognized tax loss assets are typically low relative to the book value of equity. Similar to T_LOSS, the note disclosed tax loss asset variable (TL_NOTE) tends to be small in magnitude when expressed as a percentage of the total book value of equity. Its mean (median) value is 5 percent (0). However, relative to T_LOSS, TL_NOTE has a higher average and median. This indicates a certain amount of inherent conservatism on the part of target firm managers in that, where tax loss assets are high, in absolute dollar value, they are more likely to be only note-disclosed, rather than balance sheet recognized.[29]

For the average (median) target firm in the sample, directors hold about 18 (4) percent of the shares outstanding, as indicated by DIROWN. These figures are higher than those reported by Henry (2004) perhaps due to differences in the study sample intervals, sampling procedures, and/or measurement rules used to compute the variable. Bidder prior proportional ownership (TOEHOLD) has a mean value of 9 percent, a median of zero, and a standard deviation of 15 percent. This distribution thus exhibits less in-sample internal variation than does the director ownership variable. This is as expected since observations with a toehold exceeding 50 percent are excluded from the sample. Although not reported,

[29] This runs contrary to the concerns expressed by the Australian Securities and Investment Commission (ASIC) in the 1990s that the *virtual certainty* test in the then AASB1020 was being abused by Australian managers (Cotter et al. [1998]).

bidders own an average of 92 percent of target firms at the completion of the takeover, with a median of 98.7 percent.

Table 1: Distribution of sample takeovers by industry (Panel A) and year (Panel B), 1981-2000

The industry sectors in Panel A are based on the Global Industry Classification Standard (GICS) of Standard and Poor's. The calendar years in Panel B denotes the year when the takeover announcement was made.

	Frequency	Percentage
Panel A: *By Industry*		
Materials	99	37.93
Diversified Financials	38	14.56
Food Beverage and Tobacco	29	11.11
Real Estate	21	8.05
Media	12	4.60
Insurance	10	3.83
Retailing	9	3.45
Consumer Durables and Apparel	9	3.45
Automobile and Components	7	2.68
Hotels Restaurants and Leisure	4	1.53
Other	23	8.81
Panel B: *By Calendar Year*		
1981	25	9.58
1982	18	6.90
1983	19	7.28
1984	17	6.51
1985	26	9.96
1986	19	7.28
1987	22	8.43
1988	20	7.66
1989	15	5.75
1990	4	1.53
1991	4	1.53
1992	8	3.07
1993	5	1.92
1994	3	1.15
1995	6	2.30
1996	11	4.21
1997	7	2.68
1998	11	4.21
1999	15	5.75
2000	6	2.30
Total	**261**	**100.00**

The average (median) target firm has a market capitalization (SIZE) of A$236 (A$69) millions. RETURN has negative mean and median values, demonstrating that sample target companies underperformed the market in the period leading to the takeover announcement month. Although not shown in the table, close to 50% of all target companies actually outperformed the market index in the three year period prior to their takeover announcement date.

Table 2: Descriptive statistics for 261 takeovers in Australia, 1981-2000

PREMIUM is the market-adjusted bid premium measured using the target's pre-acquisition market share price as at the one month prior to the takeover announcement month. GWILL is goodwill measured using the target's pre-acquisition market share price measured as at one month prior to the takeover announcement month. The scale used is the target's market value of equity. T_LOSS is the carry-forward recognized tax losses of the target divided by the book value of target net equity. TL_NOTE is the carry-forward footnote-disclosed tax losses of the target divided by the book value of target net equity. DIROWN is the percentage of managerial ordinary share ownership in the target. TOEHOLD is the bidder's pre-bid percentage ordinary share ownership in the target. SIZE is the target's market value of common equity as at the commencement of the takeover announcement month. RETURN is the target's prior three year excess stock returns. POST87 takes the value of one for a pre-AASB1013 (30 June 1987) acquisition announcement, and zero otherwise. CASH takes the value of one for a takeover announcement that involves (100%) cash consideration and zero otherwise.

	Mean	Median	Standard Deviation	Minimum	Maximum	Count
PREMIUM	0.4774	0.2486	1.2966	-0.9269	13.126	261
GWILL	-0.1797	-0.0366	0.8421	-7.3911	0.9387	261
T_LOSS	0.0058	0.0000	0.0348	0.0000	0.4826	261
TL_ NOTE	0.0501	0.0000	0.1765	0.0000	1.5986	261
DIROWN	0.1787	0.0354	0.2529	0.0000	1.0000	252
TOEHOLD	0.0865	0.0000	0.1468	0.0000	0.5425	252
SIZE ($millions)	235.95	69.068	667.50	1.3561	6857.2	261
RETURN	-0.2293	-0.2423	0.6460	-2.8369	2.6935	174
CASH	0.7356	1.0000	0.4418	0.0000	1.0000	261
POST87	0.5134	1.0000	0.5008	0.0000	1.0000	261

Looking at the mode of payment dummy, CASH, 73.56 percent of sample bids are cash-based. This is similar to the proportion reported in Da Silva Rosa et al. (2000) over their 1988 to 1996 sample period but higher than that in Henry (2004) for the period covering 1991 to 2000. The POST87 dummy indicates that about half of our sample takeovers occurred on either side of the AASB1013 implementation date.

5. RESULTS

Table 3 reports univariate tests of difference in firm characteristics before and after AASB1013. As predicted, the mean bid premium declines with the passage of AASB1013.

For the pre-AASB1013 period, the average (median) bid premium is 34.13% (24.97%) compared to 25.59% (21.85%) for the post-AASB1013 period. The difference in means (but not medians) is significant at the 10 percent level (two-tailed).

<Insert Table 3 here>

The mean (median) level of acquired goodwill (GWILL) is -0.2433 (-0.0533) for the pre-AASB1013 period, compared to -0.1194 (-0.0235) for the post-AASB1013 period. In the absence of a consideration of the impact of confounding factors, the tests show that AASB1013 did not contribute to a significant economy-wide decline in the mean and median levels of acquired goodwill in the sample of Australian takeovers examined.

For completeness, differences in other firm-specific characteristics are also reported. Overall, the results show that in the post-AASB1013 period, the size of target firms (SIZE), directors' share ownership (DIROWN), and tax loss assets (T_LOSS and TL_NOTE) have significantly increased relative to the pre-AASB1013 period under the t-test. However, prior target excess share returns (RETURN) have significantly decreased. No significant change in bidders' prior ownership (TOEHOLD) is detected by either of the univariate tests used.

Table 4 reports results from multiple regressions of takeover premium for the full sample. Regression 1 reports results using the basic model as specified in equation (1), without control variables, which are added in subsequent regressions. Note that the sample size is substantially reduced from 245 to 166 in Regression 4 since not all target firms acquired had a share price history extending as far back in time as three years prior to the acquisition announcement month.

<Insert Table 4 here>

The regression results show that the acquired goodwill variable is significant at conventional levels and has a negative sign. This finding is consistent with the removal of inefficient management hypothesis, and the empirical results of prior US studies (Walkling and Edmister [1985], Nathan [1988], and Ayres et al. [2002]). In addition to this, the interactive cross-product term POST87*GWILL is positive. It is significant only in Regression 3, which at best provides only marginal support for our prediction that the sign on the interactive term will be both statistically significant and opposite in sign to that reported for the acquired goodwill term. This suggests that the restriction on accounting choice for goodwill in the post-AASB1013 period has not led to a systematic reduction in the strength of the association between goodwill and premium, as compared to the unregulated period.

The time period dummy variable (POST87) is insignificant in all regressions. The insignificance of the time period dummy variable indicates that the time period is an

irrelevant consideration in the setting of the bid premium, after acquired goodwill and the restriction on accounting choice imposed by AASB1013 are taken into account. This result suggests that the stock-market crash of October 1987 (which occurred in the same financial year as first time adoption of AASB1013) was not a significant factor in altering the market-wide average level of bid premiums in Australia.

Table 3: Tests of difference in firm-specific characteristics between the pre-1987 (n=127) and post-1987 (n=134) period, 1981-2000

PREMIUM is the market-adjusted bid premium measured using the target's pre-acquisition market share price at one month prior to the takeover announcement month respectively. GWILL is goodwill measured using the target's pre-acquisition market share price measured as at one month prior to the takeover announcement month. The scale used is the target's market value of equity. T_LOSS is the carry-forward recognized tax losses of the target divided by the book value of target net equity. TL_NOTE is the carry-forward footnote-disclosed tax losses of the target divided by the book value of target net equity. DIROWN is the percentage of managerial ordinary share ownership in the target. TOEHOLD is the bidder's pre-bid percentage ordinary share ownership in the target. SIZE is the target's inflation-adjusted market value of common equity as at the commencement of the takeover announcement month. RETURN is the target's three year prior excess stock return. For each variable, the t-statistics for difference in means are reported in the first row; Wilcoxon tests for difference in medians are reported in the second row (in italics).

	Pre-1987	**Post-1987**	**Test Statistic**	**Probability**
PREMIUM	0.3413	0.2559	1.6723	0.0957
	0.2497	*0.2185*	*1.5109*	*0.1308*
GWILL	-0.2433	-0.1194	1.0476	0.2959
	-0.0533	*-0.0235*	*0.9016*	*0.3673*
ln(SIZE)	17.791	18.368	3.2228	0.0014
	17.717	*18.274*	*3.2186*	*0.0013*
DIROWN	0.1346	0.2191	2.6456	0.0087
	0.0274	*0.0764*	*1.4794*	*0.1390*
TOEHOLD	0.0910	0.0813	0.5224	0.6019
	0.0000	*0.0000*	*0.7510*	*0.4526*
T_LOSS	0.0022	0.0062	1.7841	0.0756
	0.0000	*0.0000*	*1.0580*	*0.2901*
TL_NOTE	0.0275	0.0552	1.7232	0.0861
	0.0000	*0.0000*	*1.5333*	*0.1252*
RETURN	-0.0222	-0.4183	4.2323	0.0000
	-0.1186	*-0.3943*	*3.8206*	*0.0001*

Of the control variables, only CASH*GWILL, GWILL*TOEHOLD and TOEHOLD (bidder prior proportionate share ownership) are significant. The negative and significant sign for TOEHOLD is consistent with the findings of earlier studies (Robinson and Shane [1990], Bugeja and Walter [1995], and Ayres et al. [2002]). It is also consistent with the explanations that (i) where toehold is high, there is less of a need for the successful bidder to buy out a rival bidder or recalcitrant minority through the payment of a higher bid premium, and (ii) where the bid is from a substantial shareholder, the probability of a future bid from any substantial shareholder was most probably already factored into the pre-bid market price under the continuous disclosure regime of the ASX. As a result, the percentage bid premium, when paid, is lower because it is computed using a higher base amount.

The negative and significant sign for the interaction of goodwill and toehold indicates that, at high toehold levels, there is a significant reduction in the slope of the association between goodwill and premium so that it becomes more strongly negative. This interaction term has not been a feature of any of the prior studies in the literature, and is a unique contribution of the present study**.** The finding indicates that, at high toehold levels, the bidder's relative bargaining power increases, due to entrenchment effects, and so incremental increases in acquired goodwill are less likely to be paid for by the successful bidder.

To further investigate how the implementation of AASB1013 affects the association between goodwill (and other firm-specific characteristics) and bid premium, regressions are run separately for the pre- and post AASB1013 periods in Table 5. The estimated coefficient on goodwill is significantly negative for all the reported regressions for both the pre- and post-AASB1013 samples. Although the magnitude of the coefficient on GWILL is larger in the pre-AASB1013 period than in the post-AASB1013 period, we cannot reject the null hypothesis of no difference (t-statistic = 1.09, not reported). This is true for both the base and extended regressions. This implies that the economic and statistical association between goodwill and bid premium has not significantly weakened in the post-AASB1013 period, contrary to our Research Hypothesis.

<Insert Table 5 here>

TOEHOLD is significantly negatively related to bid premium only in the post-AASB1013 period (Regression 4). The interaction variable CASH*GWILL is significantly positively related to bid premium. This relationship is somewhat weakened in the post-AASB1013 period possibly because of a weakened relationship between goodwill and premium in this time period. TOEHOLD*GWILL is only significantly related to bid premium in the pre-AASB1013 period.

Table 4: Multiple OLS regressions of takeover premium for the full sample, 1981-2000

The dependent variable is the market-adjusted bid premium measured using the target's pre-acquisition market share price at the commencement of the month prior to takeover announcement month (PREMIUM). GWILL is goodwill measured using the target's pre-acquisition market share price measured as at the commencement of the month prior to the takeover announcement. POST87 takes a value of one for bid announcements occurring after 1 July 1987 and zero otherwise. TL_NOTE is the carry-forward footnote-disclosed tax losses of the target divided by the book value of target net equity. DIROWN is the percentage of managerial ordinary share ownership in the target. TOEHOLD is the bidder's pre-bid percentage ordinary share ownership in the target. SIZE is the target's inflation-adjusted market value of common equity as at the commencement of the takeover announcement month. CASH takes a value of one for cash consideration and zero otherwise. RETURN is the target's three year prior excess stock return. White-adjusted t-statistics are in parentheses. *, **, and *** denote significance at the 0.10, 0.05, and 0.01level respectively.

	Regression 1	**Regression 2**	**Regression 3**	**Regression 4**
POST87	-0.0588	-0.0473	-0.0927	-0.0658
	(-0.9397)	(-0.6699)	(-1.3354)	(-0.7025)
GWILL	-0.3308***	-0.3511***	-0.6396***	-0.7046***
	(-4.4676)	(-4.4413)	(-4.9678)	(-3.7250)
POST87*GWILL	0.1627	0.1564	0.2217*	0.2224
	(1.4828)	(1.3175)	(1.8652)	(1.3681)
TOEHOLD		-0.2945	-0.5108**	-0.4059*
		(-1.3187)	(-2.2789)	(-1.4014)
DIROWN		-0.0292	-0.0484	-0.1119
		(-0.2183)	(-0.3759)	(-0.6733)
TL_NOTE		-0.3191	-0.3867*	-0.4698
		(-1.3199)	(-1.6546)	(-1.5192)
Ln(SIZE)		0.0104	0.0236	0.0174
		(0.4079)	(0.9457)	(0.5447)
CASH		-0.0226	0.0410	0.0512
		(-0.2946)	(0.5456)	(0.5275)
TOEHOLD*GWILL			-1.0011***	-0.7096*
			(-2.7934)	(-1.4696)
CASH*GWILL			0.4784***	0.5672***
			(3.7279)	(3.1828)
FIN			0.0715	0.1145
			(0.7533)	(0.9495)
RETURN				0.0707
				(0.8842)
Constant	0.3505***	0.2209	-0.0280	0.0826
	(7.7221)	(0.4695)	(-0.0603)	(0.1397)
Adj. R^2	0.0841	0.0814	0.1503	0.0883
N	261	245	245	166

The adjusted R-squared of 15.03% reported in this study (Regression 3 of Table 4) suggests a moderate, but not high, degree of overall explanatory power for the model taken as a whole. The adjusted R-squared is in the same immediate region as the 14.6% reported in Robinson and Shane (1990) and the 20% reported in Ayers et al. (2002).

6. CONCLUSIONS

This study shows the interaction of acquired goodwill and time period has at most a marginal positive association with takeover bid premium, suggesting that the removal of an accounting choice previously made available to successful bidding firms has not significantly reduced the strength of the association between goodwill and premium. Our findings are robust to the introduction of a number of control variables into the regression equation.

Assuming that reported goodwill numbers were used to signal expected future net cash inflows arising from intangible assets to the capital market in the pre-AASB1013 period, our findings suggest the availability of alternative means of signalling for managers after AASB1013. As Wines and Ferguson (1993) discuss, these alternative signalling mechanisms included reclassifying goodwill as IIAs at or after acquisition, and the adoption of a non-amortization policy for these IIAs. The results of Wines and Ferguson (1993) and those of the present study suggest that AASB1013 did not actually achieve the original purpose envisaged by the Australian standard-setters, i.e., that the full cost of acquiring intangible assets in acquisition would be forced through the income statement during the 20 years after the acquisition date. More research is needed to fully investigate alternative explanations for our results, and this will be the subject of follow-up work. It also will be interesting to see if the results of this study hold for different sub-sets of firms.

Lastly, the results do not support the general sentiments that AASB1013 imposed negative cash flow consequences for acquiring firms in the form of debt contracting or dividend payment restriction costs (Whittred et al. [2000, pp. 244 and 247]), or that it reduced Australian bidders' ability to compete in the global market for corporate control (Choi and Lee [1991], Lee and Choi [1992], Davis [1992], Tabakoff [1994a], [1994b], [1994c], [1995], Porter [1994], Brown [1995], Clinch [1995], Lonergan [1995], Miller [1995], Whittred et al. [2000, pp. 244 and 247], and James [2005, chap. 1]).

The findings of the study are relevant to Australia in the post-IFRS environment (the full set of IFRS is now mandatory) because they demonstrate that managers' creativity in finding ways to avoid the intended purpose of 'harsh' accounting standards is at a relatively

high level. However, viewed from the Information Signalling Perspective of PAT, this can be viewed as a desirable thing to the extent that it allows managers to use free choice of accounting policy to communicate inside information to the capital market. This is likely to be especially important in the area of intangible assets because, as Boone and Raman (2001) and Tan (2001) argue, information asymmetries between insiders and outsiders about the expected probability distribution of future cash flows are likely to be higher for these assets than for tangibles.

Table 5: Multiple OLS regressions of takeover premiums for the pre- and post-AASB1013 samples, 1981-2000

The dependent variable is the market-adjusted bid premium measured using the target's pre-acquisition market share price at the commencement of the month prior to the takeover announcement month (PREMIUM). GWILL is goodwill measured using the target's pre-acquisition market share price measured as at the commencement of the month prior to the takeover announcement. POST87 takes a value of one for bid announcements occurring after 1 July 1987 and zero otherwise. TL_NOTE is the carry-forward footnote-disclosed tax losses of the target divided by the book value of target net equity. DIROWN is the percentage of managerial ordinary share ownership in the target. TOEHOLD is the bidder's pre-bid percentage ordinary share ownership in the target. SIZE is the target's inflation-adjusted market value of common equity as at the commencement of the takeover announcement month. CASH takes a value of one for cash consideration and zero otherwise. White-adjusted t-statistics are in parentheses. *, **, and *** denote significance at the 0.10, 0.05, and 0.01level respectively.

	Pre-AASB1013		**Post-AASB1013**	
	Regression 1	**Regression 2**	**Regression 3**	**Regression 4**
GWILL	-0.3307***	-0.7533***	-0.1681**	-0.4650*
	(-2.8889)	(-4.1812)	(-1.7417)	(-1.8723)
TOEHOLD		-0.3574		-0.6610***
		(-0.9225)		(-2.4370)
DIROWN		-0.2361		0.0633
		(-1.0198)		(0.4590)
TL_NOTE		-0.5195		-0.3386
		(-1.1046)		(-1.4516)
ln(SIZE)		0.0113		0.0230
		(0.2632)		(0.8288)
CASH		-0.1054		0.2082**
		(-0.9157)		(2.3480)
TOEHOLD*GWILL		-1.2715**		-0.8125
		(-2.1393)		(-1.2449)
CASH*GWILL		0.6260***		0.4667*
		(3.1556)		(1.8366)
FIN		0.1764		0.0184
		(1.0961)		(0.2456)
Constant	0.3505***	0.2990	0.2917***	-0.2450
	(8.1089)	(0.3717)	(7.7690)	(-0.4752)
Adj. R^2	0.1073	0.1767	0.0331	0.0976
N	127	123	127	123

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