

Did the Goodwill Accounting Standard Impose Material Economic Consequences upon Australian Acquirers?

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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 to assess how the association between bid premium and acquired goodwill varies in the pre- and post-AASB1013 periods 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 a systematic reduction in the strength of the association between premium and goodwill.

1. Introduction

This research aims to investigate whether the option to freely choose goodwill accounting policy, which was removed by AASB1013: *Accounting for Goodwill*, is a valuable one for Australian acquirers. AASB1013 first applied to Australian companies in the financial year ending on or after 19 June 1988.¹ AASB1013 stated that the only acceptable accounting policy for acquired goodwill at the acquisition date was capitalization as a non-current asset. This was to be 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.

Prior to AASB1013, the unregulated accounting environment in Australia was characterized by a significant diversity in goodwill accounting policy (Goodwin and Harris, 1991; Carnegie and Gibson, 1987; Gibson and Francis, 1975). In a survey of Melbourne Stock Exchange (MSE) listed companies for the financial year 1974, Gibson and Francis (1975) report that 79 of the 273 respondents made an accounting policy choice concerning acquired goodwill in their most recent consolidated financial statements. The most common accounting practices observed at the acquisition date were: immediate write-off against consolidated reserves (41.8%); immediate write-off against consolidated profits (20.3%); periodic write-offs against consolidated profits, i.e., capitalization with systematic amortization (17.7%); write-offs at the directors' discretion against consolidated reserves (11.4%); periodic write-offs against consolidated reserves (10.1%); and write-offs at the directors' discretion against consolidated profits (10.1%).² The method that was later mandated by AASB1013, i.e., capitalization and systematic amortization to the income statement, was used by less than one-fifth of companies.

¹ For most Australian companies, this would be the financial year ending 30 June 1988. Australia decided to follow the International Accounting Standards Board (IASB) set of accounting standards 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 The total percentage exceeds 100% because 9 of the companies they surveyed used more than one policy to write off goodwill. The percentages reported here are based on a total of 79 firms.

The mandated policy of AASB1013 had the harshest income statement effects of the accounting policies used in the pre-regulation period in the sense of imposing a higher present value of combined amortization charges, which leads to a lower present value of accounting profits. For this reason, Australian companies argued frequently in the 1980s and 1990s that AASB1013 was both unrealistic and placed them at a competitive disadvantage in the global M&A market compared to acquirers from countries with less harsh goodwill accounting standards.³ This latter group of countries included the United States, the United Kingdom, Germany, Hong Kong, and Singapore. However, the arguments of these Australian companies have never been subjected to rigorous empirical scrutiny. Our paper aims to shed light on this issue by examining the change in the association between the reported goodwill number and takeover premium following AASB1013.

Prior empirical studies (Cheng *et al.*, 1997; Dunne and Ndubizu, 1995; Lee and Choi, 1992; Choi and Lee, 1991) use a cross-country research design to assess whether goodwill accounting standards that impose less harsh income statement effects upon bidders are associated with higher bid premiums. In doing so, prior findings are muddied by institutional differences across countries. By examining only one country, i.e., Australia, we are not subject to this problem. Australia also presents an ideal case for examining our research question because of the relatively harsher income statement effects of AASB1013. This suggests that the difference between the pre- and post-standard environments, and thus the economic consequences (if they exist) of the goodwill standard, is more pronounced in Australia than in either the United States or the United Kingdom.

³ See Whittred *et al.* (2000), Tabakoff (1995, 1994a, 1994b, 1994c), Miller (1995), and Porter (1994). Davis (1992), Lee and Choi (1992), and Choi and Lee (1991) argue that U.S. acquirers were at a competitive disadvantage in the global market for corporate control relative to U.K. acquirers also for reasons relating to the goodwill accounting standards operating in the two countries.

Based on a sample of 248 Australian takeovers involving listed targets from 1981 to 2000, we find evidence that takeover bid premiums are systematically related to the goodwill standard. After controlling for confounding factors, the premium is 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 significantly reduced the strength of the association between goodwill and premium. However, there is little evidence showing that AASB1013 was associated with a significant decline in either the mean bid premium or the mean acquired goodwill.

We conclude, consistent with the arguments of leading Australian companies during the 1980s and 1990s, that AASB1013 has imposed material economic consequences upon Australian acquirers, or reduced their competitiveness in the global market for corporate control. The results also support the general sentiments that AASB1013 imposed negative cash flow consequences upon Australian acquiring firms (Whittred *et al.*, 2000; Porter, 1994).

2. Hypotheses

The theoretical foundation of this paper is based on two perspectives found in positive accounting theory – information signalling and opportunism. We argue that the option to maintain freedom in accounting policy choice in the acquired goodwill area is a valuable one for successful acquirers due to information signalling and/or opportunism. If removing this option reduces the bid premium managers are willing to pay, and otherwise value-enhancing takeovers are passed up, we argue that a net loss for acquiring firm shareholders occurs.⁴

⁴ 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. However, these findings apply only *on average* (in large samples) and are

The early research, starting with Watts and Zimmerman (1978) and chronologically concluding around the time of Watts and Zimmerman (1990), focused wholly or primarily on the opportunism perspective. This 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 (*ceterus paribus*) maximizes firm value. These contracts include debt covenants and management compensation plans, which are often tied to key financial statement variables (Smith and Warner, 1979; Watts, 1977). 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 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. As contracts *ex ante* cannot prevent all *ex post* opportunism, some *ex post* opportunism will remain. 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 (Whittred *et al.*, 2000; Watts and Zimmerman, 1986; Healy, 1985) and/or to increase leverage and interest cover, thereby avoiding technical violation of accounting-based debt covenant terms (Whittred *et al.*, 2000; Watts and Zimmerman, 1986). Whittred *et al.* (2000) suggest that the imposition of AASB1013 may have had indirect cash flow consequences for Australian acquiring firms in the form of debt contracting costs, working

documented only *ex post*. As such, they say very little about whether an individual manager in a 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). 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 ward off rival bidders and/or signal good intentions to target shareholders (and thus win over stubborn minorities). As such a higher offer price can be viewed as part of the premium for control; this premium for control may decline in value over time. For a discussion of Toll's two bids for Patrick, see Creedy (2006), Ferguson (2006), Gluyas (2006), and Speedy *et al.* (2006).

possibly through the interest cover ratio, and dividend payment restrictions.⁵ International studies supporting the proposition that managers of acquiring firms reduce the level of bid premiums in order to avoid the subsequent reduction in the present value of management compensation caused by the goodwill amortization charge include Aboody *et al.* (2000), Dunne and Ndubizu (1995), Lee and Choi (1992), and Choi and Lee (1991). In the U.S. context, Aboody *et al.* (2000) and Crawford (1987) find that 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.⁶

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" (Chan and Loftus, 2003; Whittred *et al.*, 2000).⁷ This can be interpreted as being in line with the efficiency perspective (Malmquist, 1990; Mian and Smith, 1990; Watts and Zimmerman, 1990) if AASB1013 artificially restricts dividend payments below the most efficient level. However, the opportunism perspective is also relevant because this Corporations Act provision, working jointly with AASB1013, restricts managers' ability to manipulate dividend policy opportunistically in the short term due to the additional enforced reduction in profit (Whittred *et al.*, 2000). Mandatory goodwill amortization charges impact adversely upon both the income statement and the balance sheet. As a result, under the opportunism perspective, we

⁵ The interest cover ratio (typically Earnings before Interest and Tax (EBIT) divided by Gross 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.

⁶ 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 United States by SFAS No. 141 and No. 142 (2001) and by the IASB in IFRS3 (2004). Pooling was never an acceptable accounting policy in Australia.

⁷ Earlier versions of the Australian corporations' legislation (1981 to 2000) contained equivalent provisions.

hypothesize that these mandatory charges (introduced by AASB1013 in 1988) will lower both the mean and the median takeover bid premium.

We also argue, consistent with the information-signalling perspective (Holthausen, 1990; Holthausen and Leftwich, 1983), that freedom in the area of goodwill accounting policy choice allows managers to select accounting policy so as to communicate (or signal) to the capital market the future net cash inflows expected from the firm's intangible assets (Ritter and Wells, 2006; Tan, 2001; Boone and Raman, 2001; Bartov and Bodnar, 1996). Specifically, acquiring firm managers 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 reduced, they could use an immediate once-off write-down of intangibles or an increase in the rate of systematic amortization applied (Tan, 2001; Coombes *et al.*, 1997).⁸

Under the information signalling perspective, in the post-AASB1013 period, the reported goodwill numbers are arguably less meaningful and less useful since their signalling properties are reduced. Therefore, goodwill should be less closely associated with premium, a real economic variable directly under the control of the acquiring firm managers. Under the opportunism perspective, mean bid premium and mean acquired goodwill both fall post-AASB1013. Overall, the preceding discussion leads to our three hypotheses:

⁸ A false ex ante signal given by goodwill accounting policy is costly to the signaller. The reason is because once information about reduced cash flows arising from the goodwill becomes available to the capital market, the adoption of an aggressive (i.e., non-conservative) goodwill accounting policy in prior 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 U.S. context, hostile litigation has also been a historic feature of Australian commercial law. Australia is classified as Western common-law model (not code law) by Ball *et al.* (2000) within the context of the earnings conservatism literature. This classification is consistent with high levels of litigation by shareholders against management and auditors. In addition, independently of the litigation explanation, the firm, management, and auditors are liable to suffer a loss of long-term reputation capital if a firm that suffers reduced cash flows is found to have previously adopted aggressive accounting policies.

HYPOTHESIS 1. *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.*

HYPOTHESIS 2. *The mean (median) level of bid premiums paid to acquire successful Australian targets is significantly lower in the post-AASB1013 period.*

HYPOTHESIS 3. *The mean (median) acquired goodwill balance of successful Australian targets is significantly reduced in the post-AASB1013 period.*

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 Choi and Lee (1991) and Robinson and Shane (1990) and takes the following form:

$$PREMIUM_{i,t} = a_0 + a_1*POST87_{i,t} + a_2*POST87*GWILL_{i,t} + a_3*GWILL_{i,t} + e_{i,t} \quad (1)$$

where for firm i at time t , $PREMIUM_{i,t}$ is the takeover bid premium; $GWILL_{i,t}$ is acquired goodwill; $POST87$ is a dummy that takes the value of zero for a pre-AASB1013 bid and one for a post-AASB1013 bid; and $e_{i,t}$ is an independent and identically distributed error term. 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 2000.⁹

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

⁹ 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.

Index (AOAI) over the same period used to compute the bid premium.¹⁰ 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. Taylor (1987) recommends this procedure.

Acquired goodwill (*GWILL*) may partly reflect the average expected future abnormal earning power of the target (Scott, 2003, p. 231; Choi and Lee, 1991). In spite of the well documented problems associated with the empirical measurement of acquired goodwill (Lee and Choi, 1992; Choi and Lee, 1991), the pre-bid market-to-book ratio of the successful target (market price per share divided by book value of net equity acquired per share) is commonly used as its proxy.¹¹ We use a variant of the market-to-book ratio.¹² Our goodwill measure is the same measure used by Lee and Choi (1992) and Choi and Lee (1991) except that we scale it by market price, not book equity, per share. Acquired goodwill (*GWILL*) is measured 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.¹³ Since acquired goodwill is not accumulated over the same period as bid premium, there is no obvious auto-correlation between bid premium and acquired goodwill (Choi and Lee, 1991).

¹⁰ 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. This allows for alternative lengths of target pre-bid *price run-up* to be included in the measured bid premium. Although not reported in detail, using these alternative measures does not change the key results and conclusions of this paper.

¹¹ Studies that use market-to-book ratio (or its variants) as a proxy for goodwill include Cheng *et al.* (1997), Dunne and Ndubizu (1995), Lee and Choi (1992), Choi and Lee (1991), and Nathan (1988).

¹² Wyatt (1967) documents the "identification problem" for goodwill. By this he means that premium and goodwill are actually simultaneously determined by the bidder during the time that the bid price and bid price revisions, if any, are formalized. Since offer price may be chosen so as to generate the desired goodwill number, premium affects goodwill as well as goodwill affects premium. However, by using a variant of market-to-book as the goodwill proxy, the endogeneity problem is avoided since market price and book value are both pre-bid variables and cannot be affected by premium.

¹³ 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.

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 actual goodwill recognised by the bidder to be positively associated with market-to-book ratio because bidders on average pay more for firms with a higher pre-acquisition market share price. Targets with high market-to-book ratios on average expose the bidder to higher post-acquisition goodwill amortization charges. Therefore, our goodwill measure is positively associated with the actual goodwill recognised by the bidder firm, i.e., the amount that will later be subjected to mandatory amortization charges.¹⁴

The prediction of the model, as applied to the first hypothesis, is that the cross product term ($POST87*GWILL$) has 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 time period dummy ($POST87$) incorporates the effects of factors, other than those related to AASB1013, that cause bid premium to vary systematically between the pre- and post-AASB1013 periods. No unambiguous prediction is made concerning the sign of the time period dummy because there is no reason for us to expect bid premium to be systematically different across the two periods for reasons unrelated to the goodwill accounting standard.¹⁵

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

¹⁴ We identified 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 44 firms in the post-AASB1013 period. The correlation between this measure and the one we use in this paper ($GWILL$) is 0.35 (significant at the 1% level). It is thus not surprising that similar results (although not reported in detail) are found using this alternative goodwill measure.

¹⁵ Apart from the worldwide stock market crash of October 1987, there is the worldwide recession from 1988 to 1990, and the rise in the use of poison pill schemes by U.S. target firms in the 1980s and into the 1990s (Comment and Schwert, 1995). These factors are captured by three period dummy variables that take a value of one for takeovers during 1988-90, 1991-97, and 1998-2000, and zero otherwise. Although not reported in detail, including these additional time dummies in regression equations (either individually or in combination) does not alter the key findings and conclusions of this paper.

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 U.S. 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*, measured as the sum of the target directors' share ownership, direct and beneficial, divided by the total number of target firm's issued ordinary shares.¹⁶

The proportion of the 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 (Ayres *et al.*, 2002; Bugeja and Walter, 1995; Robinson and Shane, 1990). Where the bidder has a large pre-bid holding, the pre-acquisition share price would 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. 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. *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. Cash, as opposed to ordinary shares, is typically associated with a higher bid premium (Schwert, 2000; Huang and Walkling, 1987) as well as a higher probability of a successful bid outcome (Sudarsanam, 1995).

¹⁶ Information about non-director managerial ownership is not publicly available in Australia. We use *DIROWN* to denote this variable (meaning "director ownership") but use the term "managerial ownership" in the text to remain consistent with prior studies which mostly use U.S. data.

The following reasons are relevant. First, share bids take longer to process and are more likely to lead to management resistance or a rival bidder. Second, since firms are more likely to issue shares when they are over-valued (Myers and Majluf, 1984), bids that involve share payments will be received negatively by target shareholders.¹⁷ Third, in the United States, unlike cash bids, share bids do not attract capital gains tax (Huang and Walkling, 1987). Nevertheless, the Australian evidence shows no significant association between bid premium and mode of payment (Da Silva Rosa *et al.*, 2000) or between bid premium 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 United States but not in Australia. Since the “tax-neutrality” period, which was effective until 10 December 1999 in Australia (Henry, 2004), 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 may be influenced by such losses (Brealey *et al.*, 2000). 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. The high recognized tax losses may be due to prior inefficient management (Ayres *et al.*, 2002; Nathan, 1988; Walkling and Edmister, 1985). 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

¹⁷ 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) met with success. The second bid convinced Patrick Chairman Peter Scanlon and CEO Chris Corrigan, who had both held out strongly against the first bid, to relinquish their strategic minority shareholdings in Patrick. This allowed the bid to succeed.

announcement date, divided by the book value of the target net equity in the same financial year.¹⁸

Target firm size is one of the major determinants of the probability of a successful takeover outcome, with larger target firms being less likely to be taken over. Extrapolating from the evidence of a positive association between the probability of success and bid premium (Franks and Mayer, 1996; Holl and Kyriazis, 1996; Walkling, 1985), 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 December 2000 Australian dollars using the Consumer Price Index published by the *Australian Bureau of Statistics*. 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.

As in past studies, a concern in this study is that our acquired goodwill measure may be capturing underlying theoretical constructs other than the expected loss of accounting-related benefits associated with the passage of AASB1013. These alternative constructs include: reported earnings conservatism of the conditional and unconditional types (Ball and Shivakumar, 2005; Ball *et al.*, 2003; Basu, 1997); the presence of growth options (Wong and Wong, 2001); and prior management inefficiency (Nathan, 1988; Walkling and Edmister, 1985). Walkling and Edmister (1985) argue 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 competitive market for corporate control will create a negative association between market-to-book and premium.¹⁹ For this reason, we also control

¹⁸ Similar findings (not reported) are obtained when we use that part of the FITB derived from tax losses (not timing differences) that is recognized in the target's balance sheet (*T_LOSS*).

¹⁹ In the U.S. 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

for prior performance in the tests. *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.

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 Australian targets and bidders were included so as to ensure availability of share price and annual report data. The targets were required to be listed companies but the bidders were not. We excluded foreign bidders since the incentives of domestic bidders can be different from those of foreign acquirers; this sampling procedure also ensures that all sample firms are subject to the same accounting standard for goodwill. 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

No. 16 could be met (to qualify to use pooling). 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 U.S. 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 a variant of market-to-book to proxy for goodwill and, as stated earlier, reverse causation and endogeneity cannot occur using this proxy because premium cannot affect pre-bid market-to-book.

period prior to 1991, 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.²⁰ 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.²¹

Table 1 provides a distribution of the final sample of 248 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%), food, beverage and tobacco (11%), other (9%), real estate (8%), and media (5%) sectors.²² High takeover activities occurred in 1981 (10%), 1985 (10%), 1987 (8%) and 1988 (8%). In contrast, very few takeover announcements (23 in total or an average rate of 4.6 per year) occurred during 1990 to 1994 (inclusive).

< Table 1 here >

²⁰ 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.

²¹ Prior studies do not look to see whether consolidation was actually effected. They simply assume that if their database says 50% ownership was reached by a bid then consolidation was effected. A more rigorous and exacting rule 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).

²² These figures are generally representative of the population, with 22% of ASX-listed firms classified as materials, 13% as diversified financials, 3% as food, beverage and tobacco, 4% as media, and 3% as retail.

Table 2 reports the descriptive statistics for sample takeovers.²³ The average bidder pays an excess bid premium (*PREMIUM*) of 37.1% 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 24.5%. The average acquired goodwill (*GWILL*) is -0.166 with a median of -0.046. 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 (68.6%) and still nearly 50% of sample firms have positive acquired goodwill.

< Table 2 here >

The recognized tax loss assets variable (*T_LOSS*) has a mean (median) of less than 1% (0%), 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% (0%).²⁴

For the average (median) target firm in the sample, directors hold 17.7% (3.5%) of the shares outstanding, as indicated by *DIROWN*. Bidder prior proportional ownership (*TOEHOLD*) has a mean (median) value of 8.8% (0%), and a standard deviation of 14.8%. Although not reported, bidders own on average 92% of target firms at the completion of the takeover, with a median of 98.7%.

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

²³ We performed the common practice of winsorizing observations greater than three standard deviations from the mean.

²⁴ The fact that the mean carry-forward tax loss reported in the notes far exceeds the mean carry-forward tax loss reported on balance sheet suggests an inherent conservatism on the part of Australian managers towards reporting these assets on the face of the balance sheet. Under the then Australian accounting standards (the former AASB1020), managers could only report these assets on the face of the balance sheet if in their opinion future recoupment of the benefits was "virtually certain". Our results run contrary to the concerns expressed by the Australian Securities and Investment Commission (ASIC) in the 1990s that the virtual certainty test was being abused by Australian managers (Cotter *et al.*, 1998).

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 outperformed the market in the three year period prior to their takeover announcement date.

Looking at the mode of payment, 72.2% of sample bids are cash-based (*CASH*). This is similar to the proportion reported in Da Silva Rosa *et al.* (2000) for 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. The mean and median bid premium both decline after the passage of AASB1013. For the pre-AASB1013 period, the average (median) bid premium is 42.9% (26.6%) compared to 31.2% (21.1%) for the post-AASB1013 period. Only the difference in medians is significant at the 5% level (one-tailed). There is thus marginal support for Hypothesis 2.

< Table 3 here >

The mean (median) level of acquired goodwill (*GWILL*) is -0.195 (-0.050) for the pre-AASB1013 period, compared to -0.137 (-0.043) for the post-AASB1013 period. In the absence of a consideration of the impact of confounding factors, the univariate 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. As a result, we find no support for Hypothesis 3.

For completeness, differences in other firm-specific characteristics are also reported. Overall, there is some evidence showing that in the post-AASB1013 period, the size of target

firms (*SIZE*), managerial ownership (*DIROWN*), and tax loss assets (*T_LOSS* and *TL_NOTE*) have significantly increased relative to the pre-AASB1013 period. However, prior target excess share returns (*RETURN*) have significantly decreased. No significant change in bidders' prior ownership (*TOEHOLD*) and mode of payment (*CASH*) is detected by either of the univariate tests used.

Table 4 reports results from multiple regressions for the full sample. Regression 1 reports results using the basic model as specified in equation (1), with the control variables added in subsequent regressions. Regression 3 is identical to Regression 2 but with the addition of *RETURN*. Because not all target firms had a share price history extending as far back as three years prior to the acquisition announcement month, the sample size in Regression 3 is substantially reduced.

< Table 4 here >

The regression results show that the coefficient on 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 U.S. studies (Ayres *et al.*, 2002; Nathan, 1988; Walkling and Edmister, 1985). In addition, the coefficient on the interactive cross-product term *POST87*GWILL* is positive. Its statistical significance in the larger and full regression (Regression 2) supports our prediction that the interactive term will be both significant and opposite in sign to that reported for the acquired goodwill term. The results suggest that the restriction on accounting choice for goodwill in the post-AASB1013 period has led to a significant reduction in the strength of the association between goodwill and premium.

The time period dummy variable (*POST87*) is insignificant in all regressions, suggesting 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 average level of bid premium in Australia.

Of the control variables, only *TOEHOLD*GWILL*, *TOEHOLD* (bidder prior proportionate share ownership), *CASH*GWILL* and *TL_NOTE* are significant. The negative and significant sign for *TOEHOLD* is consistent with the findings of earlier studies (Ayres *et al.*, 2002; Bugeja and Walter, 1995; Robinson and Shane, 1990). It is also consistent with the explanations that (a) 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 (b) where the bid is from a substantial shareholder, the probability of a future bid from any substantial shareholder had already been 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 finding suggests that, at high toehold levels, the bidder's relative bargaining power increases, due to entrenchment effects. As a result, incremental increases in acquired goodwill are less likely to be paid for by the successful bidder. The significantly positive estimated coefficient of the interactive term *CASH*GWILL* suggests that for cash offers, the association between goodwill and premium is less.

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. The results for these regressions are reported in Table 5. The estimated coefficient on goodwill is significantly negative for all the

reported regressions for both the pre- and post-AASB1013 samples. *GWILL* is higher in the post-AASB1013 period than in the pre-AASB1013 period (meaning that the coefficient is less negative) and we can reject the null hypothesis of no difference (the *t*-value is at least 13.17). This is the case for both the base and extended regressions. Consistent with the regression results for the full sample in Table 4, Table 5 regressions show that the economic and statistical association between goodwill and bid premium has significantly weakened in the post-AASB1013 period, supporting Hypothesis 1.

< 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* and *TL_NOTE* are only significantly related to bid premium in the pre-AASB1013 period.

Looking at the adjusted R^2 for the full sample, our model at best explains 20.4% of the cross-sectional variation in takeover premium (see Regression 2 of Table 4). Although modest, the overall explanatory power for the model is of the same magnitude as reported in Ayers *et al.* (2002) and Robinson and Shane (1990). The R^2 being in the same region as in prior studies is consistent with our model having no important omitted variables (Wong and Wong, 2001; Watts and Zimmerman, 1990).

6. Conclusions

This study shows that the interaction of acquired goodwill and time period, denoting the passage of approved accounting standard AASB1013 in Australia in 1988, has a positive association with

takeover bid premium, suggesting that the removal of an accounting choice previously made available to successful bidding firms has significantly reduced the strength of the association between goodwill and premium. The results are robust to the introduction of a number of control variables into the regression equation. We find little evidence that AASB1013 led to a systematic decline in the mean bid premium or the mean acquired goodwill in Australian takeovers.

Our findings are consistent with the sentiments expressed in Australia in the 1980s and 1990s that the standard imposed negative cash flow consequences in the form of debt contracting or dividend restriction costs (Whittred *et al.*, 2000) and with the assertion that AASB1013 reduced the ability of Australian bidders to compete in the global M&A market (Whittred *et al.*, 2000; Tabakoff, 1995, 1994a, 1994b, 1994c, 1995; Porter, 1994).

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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 | 94 | 37.90 |
| Diversified Financials | 36 | 14.52 |
| Food Beverage and Tobacco | 27 | 10.89 |
| Real Estate | 20 | 8.06 |
| Media | 12 | 4.84 |
| Insurance | 10 | 4.03 |
| Retailing | 9 | 3.63 |
| Consumer Durables and Apparel | 8 | 3.23 |
| Automobile and Components | 5 | 2.02 |
| Hotels Restaurants and Leisure | 4 | 1.61 |
| Other | 23 | 9.27 |
| Panel B: By Calendar Year | | |
| 1981 | 25 | 10.08 |
| 1982 | 18 | 7.26 |
| 1983 | 19 | 7.66 |
| 1984 | 17 | 6.85 |
| 1985 | 25 | 10.08 |
| 1986 | 19 | 7.66 |
| 1987 | 21 | 8.47 |
| 1988 | 21 | 8.47 |
| 1989 | 15 | 6.05 |
| 1990 | 4 | 1.61 |
| 1991 | 4 | 1.61 |
| 1992 | 7 | 2.82 |
| 1993 | 5 | 2.02 |
| 1994 | 3 | 1.21 |
| 1995 | 6 | 2.42 |
| 1996 | 7 | 2.82 |
| 1997 | 5 | 2.02 |
| 1998 | 10 | 4.03 |
| 1999 | 13 | 5.24 |
| 2000 | 4 | 1.61 |
| Total | 248 | 100.00 |

TABLE 2: Descriptive statistics for 248 takeovers in Australia, 1981-2000

PREMIUM is the market-adjusted bid premium measured using the target's pre-acquisition market share price as at 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 divided by 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 firm. TOEHOLD is the bidder's pre-bid percentage ordinary share ownership in the target firm. 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 return. CASH takes the value of one for a takeover announcement that involves (100%) cash consideration and zero otherwise. POST87 takes a value of one for bid announcements occurring after 1 July 1987 and zero otherwise.

| | Mean | Median | Standard Deviation | Minimum | Maximum | Count |
|-------------------|---------|--------|-----------------------|---------|-----------|-------|
| PREMIUM | 0.371 | 0.245 | 0.590 | -0.927 | 3.000 | 248 |
| GWILL | -0.166 | -0.046 | 0.686 | -3.000 | 0.939 | 248 |
| T_LOSS | 0.005 | 0.000 | 0.035 | 0.000 | 0.483 | 248 |
| TL_NOTE | 0.051 | 0.000 | 0.181 | 0.000 | 1.599 | 248 |
| DIROWN | 0.177 | 0.035 | 0.254 | 0.000 | 1.000 | 240 |
| TOEHOLD | 0.088 | 0.000 | 0.148 | 0.000 | 0.543 | 240 |
| SIZE (\$millions) | 236.187 | 68.586 | 679.243 | 1.356 | 6,857.241 | 248 |
| RETURN | -0.229 | -0.242 | 0.646 | -2.837 | 2.694 | 174 |
| CASH | 0.722 | 1.000 | 0.449 | 0.000 | 1.000 | 248 |
| POST87 | 0.492 | 0.000 | 0.501 | 0.000 | 1.000 | 248 |

TABLE 3: Tests of difference in firm-specific characteristics between the pre-1987 and post-1987 period, 1981-2000

PREMIUM is the market-adjusted bid premium measured using the target's pre-acquisition market share price as at 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 divided by 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. CASH takes the value of one for a takeover announcement that involves (100%) cash consideration and zero otherwise. DIROWN is the percentage of managerial ordinary share ownership in the target firm. TOEHOLD is the bidder's pre-bid percentage ordinary share ownership in the target firm. 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 return. For each variable, the p-values 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 | p-values |
|-----------|--------|-----------------|------------------|-----------------|
| PREMIUM | Mean | 0.429 | 0.312 | 0.117 |
| | Median | <i>(0.266)</i> | <i>(0.221)</i> | <i>(0.090)</i> |
| GWILL | Mean | -0.195 | -0.137 | 0.510 |
| | Median | <i>(-0.050)</i> | <i>(-0.043)</i> | <i>(0.428)</i> |
| log(SIZE) | Mean | 9.731 | 9.969 | 0.029 |
| | Median | <i>(9.697)</i> | <i>(9.940)</i> | <i>(0.003)</i> |
| DIROWN | Mean | 0.134 | 0.222 | 0.007 |
| | Median | <i>(0.027)</i> | <i>(0.100)</i> | <i>(0.131)</i> |
| TOEHOLD | Mean | 0.091 | 0.085 | 0.770 |
| | Median | <i>(0.000)</i> | <i>(0.000)</i> | <i>(0.539)</i> |
| T_LOSS | Mean | 0.002 | 0.009 | 0.130 |
| | Median | <i>(0.000)</i> | <i>(0.000)</i> | <i>(0.074)</i> |
| CASH | Mean | 0.683 | 0.762 | 0.162 |
| | Median | 1.000 | 1.000 | <i>(0.162)</i> |
| TL_NOTE | Mean | 0.033 | 0.070 | 0.108 |
| | Median | <i>(0.000)</i> | <i>(0.000)</i> | <i>(0.040)</i> |
| RETURN | Mean | -0.022 | -0.418 | 0.000 |
| | Median | <i>(-0.119)</i> | <i>(-0.394)</i> | <i>(0.000)</i> |

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 one month prior to the takeover announcement month divided by the target's market value of equity. 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 firm. TOEHOLD is the bidder's pre-bid percentage ordinary share ownership in the target firm. 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 return. CASH takes the value of one for a takeover announcement that involves (100%) cash consideration and zero otherwise. FIN is an industry dummy taking a value of one for firms in the finance sector and zero otherwise. White-adjusted t-statistics are in parentheses. *, **, and *** denote significance at the 0.10, 0.05, and 0.01 level respectively.

| | Regression 1 | Regression 2 | Regression 3 |
|-------------------------|-----------------------|-----------------------|----------------------|
| GWILL | -0.387*** (-3.281) | -0.664*** (-3.087) | -0.540** (-2.013) |
| POST87 | -0.065 (-1.001) | -0.099 (-1.357) | -0.045 (-0.420) |
| GWILL*POST87 | 0.219 (1.415) | 0.317** (2.344) | 0.290 (1.544) |
| TOEHOLD | | -0.603*** (-3.005) | -0.464* (-1.927) |
| DIROWN | | -0.081 (-0.756) | -0.157 (-1.141) |
| TL_NOTE | | -0.279** (-1.991) | -0.364* (-1.713) |
| Log(SIZE) | | 0.028 (0.842) | -0.001 (-0.014) |
| CASH | | 0.023 (0.310) | 0.071 (0.723) |
| TOEHOLD*GWILL | | -1.128*** (-2.669) | -1.014** (-2.066) |
| CASH*GWILL | | 0.436** (2.322) | 0.419** (2.083) |
| FIN | | 0.060 (0.577) | 0.105 (0.752) |
| RETURN | | | 0.074 (1.036) |
| Constant | 0.354*** (7.694) | -0.088 (-0.148) | 0.397 (0.535) |
| Adjusted R ² | 0.125 | 0.204 | 0.082 |
| N | 248 | 233 | 159 |

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 takeover announcement month (PREMIUM). GWILL is goodwill measured using the target's pre-acquisition market share price measured as at one month prior to the takeover announcement month divided by the target's market value of equity. 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 firm. TOEHOLD is the bidder's pre-bid percentage ordinary share ownership in the target firm. 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 return. CASH takes the value of one for a takeover announcement that involves (100%) cash consideration and zero otherwise. FIN is an industry dummy taking a value of one for firms in the finance sector and zero otherwise. White-adjusted t-statistics are in parentheses. *, **, and *** denote significance at the 0.10, 0.05, and 0.01 level respectively.

| | Pre-AASB1013 | | Post-AASB1013 | |
|--------------------|-----------------------|-----------------------|---------------------|-----------------------|
| | Regression 1 | Regression 2 | Regression 3 | Regression 4 |
| GWILL | -0.387*** (-3.281) | -0.862*** (-3.052) | -0.168* (-1.689) | -0.401 (-1.593) |
| TOEHOLD | | -0.490 (-1.454) | | -0.715*** (-2.609) |
| DIROWN | | -0.301 (-1.551) | | 0.041 (0.329) |
| TL_NOTE | | -0.396** (-2.594) | | -0.198 (-1.021) |
| Log(SIZE) | | 0.009 (0.131) | | 0.036 (1.252) |
| CASH | | -0.132 (-1.315) | | 0.181* (1.815) |
| TOEHOLD*GWILL | | -1.572*** (-3.227) | | -0.855 (-1.340) |
| CASH*GWILL | | 0.701** (2.376) | | 0.393* (1.767) |
| FIN | | 0.274 (1.524) | | -0.073 (-0.874) |
| Constant | 0.354*** (7.696) | 0.373 (0.311) | 0.289*** (6.195) | -0.453 (-0.862) |
| Adjusted R-squared | 0.166 | 0.272 | 0.041 | 0.110 |
| N | 126 | 122 | 122 | 111 |