Takeover premiums and the perception of auditor independence and reputation

Abstract

This study investigates if there is a positive association between takeover premiums and the bidder's perception of target firm auditor reputation and independence. Using auditor size as a proxy for auditor reputation, the results indicate that target shareholders receive a higher takeover premium when a Big 4 auditor audits the target firm in the year prior to the takeover announcement. This result is only significant however in the period prior to the highly publicised audit failures. The impact of perceived auditor independence on takeover premiums is studied using the levels and size of non-audit service (NAS) fees provided by the target firm auditor. Using three proxies for auditor independence, the results do not show an association between perceived auditor independence and takeover premiums. This finding is robust to partitioning the sample by auditor size, takeover hostility and splitting the sample into takeovers pre- and post- the corporate scandals that occurred in 2002.

Key Words: Auditor independence, auditor quality, mergers and acquisitions, takeover premiums

JEL Classifications: G34, M41, M42

1. Introduction

The provision of non-audit services (NAS) by auditors to their clients received

worldwide regulatory attention in the early 2000s, following various high-profile

corporate collapses (e.g., Enron and WorldCom (US) and HIH Insurance (Australia)).

Underpinning this regulatory reform is the belief that the provision of NAS reduces

the quality of financial statements by impairing auditor independence. As stated by

the US Securities and Exchange Commission, "an auditor's independence is impaired

either when the accountant is not independent in fact, or when in light of all relevant

facts and circumstances, a reasonable investor would conclude that the auditor would

not be capable of acting without bias" (SEC 2000). This comment highlights the two

dimensions of auditor independence: "independence in fact" and "independence in

appearance." Most prior research examining the impact of NAS has concentrated on

the first dimension of auditor independence. The conclusion from the majority of

these studies is that NAS does not impair auditor independence (e.g., DeFond,

Raghunandan and Subramanyam 2002; Chung and Kallapur, 2003; Hay, Knechel and

Li, 2006). However, much less attention has been devoted to the second dimension of

auditor independence (exceptions include Glezen and Millar, 1985, Dopuch, King and

Schwartz, 2003; Krishnan, Sami and Zhang, 2005; Francis and Ke, 2006).

Building on the comment of the SEC, this paper examines whether the appearance of

auditor independence impacts on the decisions made by investors. The context used

in this study is the premium offered by bidding firms in takeover offers for stock

exchange listed targets. After a company determines to make a takeover offer, the

calculation of the offer price is a crucial decision. Where the bidding firm (and its

advisers) do not have access to private information about the target firm, the pricing

decision must be based on publicly available target firm financial information. In these circumstances, it is expected that any doubt over target firm financial statement credibility will flow through to the premium offered. As such, in corporate takeovers, the credibility and quality of financial statements attains a crucial importance, particularly as many target firms are relatively small entities with limited analyst following. This context thus provides an interesting research setting to determine if the provision of NAS affects the perception of auditor independence and consequently, influences the premium offered by the acquiring firm. Investigating this association in Australia is advantageous as fees received by auditors are a required disclosure. Furthermore, as Australia is less litigious than the US, Australian auditors have less incentive to remain independent due to the lower concern that litigation will harm their reputation (Francis, 2006 and Gul, Tsui and Dhaliwal, 2006).

Prior research is also extended by examining if target firms with auditors believed to have a superior reputation (i.e., Big 4) receive a higher takeover premium due to the perception of greater financial statement credibility. Additionally, the study determines if this relationship was impacted by the highly publicised auditing failures that occurred in the early 2000's.

This study tests the hypotheses of a positive relationship between takeover premiums and the acquiring firm's perception that the target firm auditor is reputable and has maintained their independence from the management of the target firm. To test the reputation hypothesis, we separate target firm auditors using the traditional Big 4/non-Big 4 framework. The results are consistent with higher takeover premiums being paid to target firms engaging large auditors, particularly, in hostile takeovers. This

finding is sensitive however to partitioning the sample pre- and post- the auditing failures that resulted in the increased regulation on the provision of NAS by auditors. In the period prior to 2002 there is a positive relationship between auditor size and takeover premiums. However, after the well publicised auditing scandals the results indicate that large auditors are no longer associated with higher takeover premiums. This is consistent with a loss in reputation for the large auditing firms arising from the auditing failures.

Using audit fee and NAS fee data for the target firm for the year prior to the takeover announcement; this paper measures the appearance of target firm auditor independence three ways. Firstly, the ratio of NAS fees to total fees paid to the target auditor (*RNASTOT*) and secondly, the ratio of NAS fees to audit fees paid to the target auditor (*RNASAUD*). The final measure uses the natural logarithm of the NAS fee (*LNNAS*). Inconsistent with NAS reducing the appearance of auditor independence and hence lowering the credibility of the target firm financial statements, the results for each measure of auditor independence is insignificant in explaining takeover premiums. The insignificant results are not sensitive to partitioning the sample by takeover hostility or into takeovers that were announced before and after the auditing scandals.

The remainder of the paper is structured as follows. Section 2 discusses prior literature that allows the development of hypotheses that relate takeover premiums to auditor reputation and auditor independence. The subsequent section discusses the research design and is followed by a description of the data collection process.

Section 5 presents the results of the auditor reputation and auditor independence hypotheses. The final section of the paper provides a discussion and a conclusion.

2. Takeover premiums and the role of the target firm auditor

There is a substantial body of prior research across many countries that document significant premiums in corporate takeovers. Bargeron, Schlingemann, Stulz and Zutter (2008), for instance, shows that target shareholders in US takeovers receive abnormal returns of 30% around the announcement of a takeover. Findings in other countries also indicate significant wealth gains to target shareholders. Bugeja (2005) reports takeover premiums of 28% in Australia, whilst Constantinou, Trigeorgis and Vafeas (2005) find abnormal returns of 26% in hostile UK takeovers. Various explanations have been proposed and tested to explain the size of takeover premiums. These include: synergies (e.g.. Morck, Shleifer and Vishny, 1990; Sudarsanam, Holl and Salami, 1996 and Hietala, Kaplan and Robinson, 2003), disciplining of inefficient or underperforming target management (e.g., Agrawal and Jaffe, 2003 and Harford, 2003) and the differential tax treatment of alternative payment forms (e.g., Huang and Walkling, 1987; Draper and Paudyal, 1999 and Da Silva Rosa, Izan, Steinback and Walter, 2000).

Raman, Shivakamur and Tamayo (2008) report a negative association between target firm earnings quality and takeover premiums in US negotiated bids and an insignificant finding in non-negotiated bids. Their explanation of these findings is that information obtained in negotiations is likely to be more useful for targets with poor earnings quality than for those with high earnings quality. Whether premiums are related to perceived higher quality target firm financial statements arising from the

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target firm engaging an auditor that is perceived to be independent and reputable remains unexamined. Louis (2005) studied the impact of acquiring firm auditor choice on acquiring firm abnormal returns around a takeover announcement. The results indicate that bidding firms have higher returns when they are audited by a non-Big 4 firm, particularly in the takeover of a privately owned target. This finding is consistent with local auditors having an advantage in providing merger advice in smaller acquisitions.

When determining the price to offer in a corporate acquisition, an acquiring firm is faced with information asymmetry over the "true value" of the target firm. In the absence of access to internal target firm financial information, the bidder must rely on the externally produced target firm financial statements to assess target firm value. It is expected that the degree of reliance on and confidence in this publicly available information will be influenced by the perceived quality of the financial statements. As the function of an auditor is to attest to the financial statement information, this study argues that a greater level of credibility will be added to the target firm financial report when the target auditor is perceived by the acquiring firm to have a better reputation and have a higher level of independence.

As audit reputation is not directly observable, prior research generally uses auditor size and brandname as an indicator of auditor reputation and quality. The use of size as a proxy for audit quality is advocated by DeAngelo (1981). She argues that as larger audit firms have a greater potential loss of client specific quasi-rents from breaching audit independence they have a greater ability to perform their duties free of the influence of management. Size may also be a good proxy for quality because

large auditors have an incentive to protect their investment in brandname and reputation (Klein and Leffler, 1981 and Shapiro, 1983). The findings of prior research (Francis, 1984; Francis and Stokes, 1986; Palmrose, 1986; Francis and Simon, 1987 and Gist, 1992) of an audit fee premium being paid to large auditors is typically interpreted as being consistent with such auditors providing a higher quality product and earning a return on their brandname investment.

Previous research that has examined the outcomes of the audit process is also consistent with large firms providing higher quality audits. For example, prior studies indicate that large auditors have a lower incidence of litigation (Palmrose, 1988)[1] and are associated with lower underpricing in initial public offerings (IPOs) (Balvers, McDonald and Miller, 1988 and Beatty, 1989). The evidence of significantly lower underpricing in IPO's where larger auditors are employed is consistent with these auditors adding to the credibility of the financial information provided in the prospectus. Chang, Gygax, Oon and Zhang (2008) however find greater underpricing in Australian IPO's when a large auditor is used. They interpret this result as indicating that the use of a quality auditor signals a higher after-market value of the newly listed firm. Also, in the context of IPO's, Menon and Williams (1991) find that the majority of auditor changes are to a large firm, consistent with such auditors increasing financial statement credibility. Menon and Williams also report that underwriters increase fees to clients in firm commitment IPO's if a non-Big 8 auditor is used, consistent with greater underwriter risk associated with lower financial statement quality. Further, Lee, Stokes, Taylor and Walter, (2003) show that firms

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[1] Inconsistent results are obtained by Lys and Watts (1994). They find the probability of litigation is not associated to audit firm size.

that voluntarily provide earnings forecasts in their prospectus are more likely to use a high quality auditor.

Where an auditor provides NAS to their audit clients, it is argued that cost savings arising from knowledge spillovers create an economic bond between client and auditor (Simunic, 1984; Beck, Frecka and Solomon 1988). It is commonly contended that this economic dependence of an auditor on their client results in the auditor being more willing to compromise their independence and acquiesce to the will of management. This of course assumes that the costs of breaching independence (e.g., litigation and loss of reputation) are less than the benefits of retaining the client. Additionally, it is also claimed that as NAS provide a greater financial return, auditors will not want to take actions that jeopardise this lucrative revenue stream. For example, Arthur Levitt, the chairman of the US SEC, stated, "the audit function is simply being used as a springboard to more lucrative consulting services" (Levitt, 2000).

Research investigating the output of financial reporting, however, has generally been unable to consistently document that auditors' independence "in fact" is impaired by higher amounts of NAS. For example, prior studies document no association between the likelihood of auditor qualifications and NAS (Barkess and Simnett, 1994; Craswell, 1999; Craswell, Stokes and Laughton, 2002; DeFond, Raghunandan and Subramanyam 2002 and Hay, Knechel and Li, 2006)[2] and audit tenure and NAS (DeBerg, Kaplan and Pany, 1991; Barkess and Simnett, 1994 and Hay, Knechel and

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[2] Contrary evidence is found in Wines (1994).

Li, 2006).[3] Further, although Frankel, Johnson and Nelson (2002) document an association between NAS and both the frequency of reporting a small earnings surprise and discretionary accruals, the results of the study have been found to be sensitive to research design in later studies (Ashbaugh, LaFond, and Mayhew, 2003; Chung and Kallapur, 2003; Larcker and Richardson, 2004 and Reynolds, Deis and Francis, 2004). Cahan, Emanuel, Hay and Wong (2008) find no association in New Zealand between discretionary accruals and either NAS growth rates or the length of time a client has purchased NAS. Their results however suggest there is an increase in discretionary accruals when a client is important to the auditor and either NAS fees are increasing quickly or the client has a longer history of purchasing NAS from the auditor. Kinney, Palmrose and Scholz (2004) examine the association between financial report restatements and NAS fees and document a positive relationship only for unspecified NAS fees. Ruddock, Taylor and Taylor (2006) show that NAS fees are unrelated to earnings conservatism.

To date, the majority of studies examining auditor independence have focused on investigating whether NAS has impaired actual auditor independence. Typically, however, regulators focus not only on "independence in fact" but "independence in appearance." This second aspect of auditor independence has, however, received less attention in prior research. Glezen and Millar (1985) examine whether the disclosure of NAS fees influences auditor approval rates. Inconsistent with NAS reducing the appearance of independence, the results show no association between auditor approval rates and the ratio of NAS fees to audit fees. Gul, Tsui and Dhaliwal (2006) and Krishnan, Sami, Zhang (2005) find that a firm's earnings response coefficient

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[3] Beck, Frecka and Solomon (1988) present inconsistent results and find auditor tenure is significantly greater where auditors provide ongoing NAS.

(ERC) is inversely related to the level of NAS fees provided by a firm's auditor for Australia and the US respectively. Francis and Ke (2006) similarly report that firms with high levels of NAS have a lower ERC with the result driven by firms with high accruals. Dopuch, King and Schwartz (2003), using an experimental setting, find that the disclosure of NAS impacts on the appearance of auditor independence even where the facts suggest the auditor is independent in fact.

Studies assessing the impact of the collapse of Enron on other audit clients of Arthur Andersen have produced mixed findings. Krishnamurthy, Zhou and Zhou (2006) find that Andersen's other audit clients experience significant negative abnormal returns around the indictment of Andersen in March 2002 and that these negative returns are greater for those firms that purchased higher NAS. On the other hand, although Chaney and Philipich (2002) find that Andersen's other clients exhibited significant negative abnormal returns around the disclosure in January 2002 that Andersen had shredded a number of documents following the Enron failure, the abnormal return is not associated with the level of NAS provided by Andersen.

Despite a lack of conclusive research findings that document NAS fees impinge on auditor independence, corporate regulators worldwide have moved to provide greater controls over the provision of NAS by auditors and there have been calls to prohibit the provision of NAS by a firm's auditor (e.g., Francis, 2004). For example, the US Sarbanes-Oxley Act legislated in 2002 prohibited the provision of certain types of services by auditors to their audit client (e.g., internal control) and requires that other NAS provided by the firm's auditor must be approved by an organisation's audit committee. In Australia, audit reforms were put in place in 2004 following CLERP

Issue Paper 9 "Corporate Disclosure – Strengthening the Financial Reporting Framework." The reforms include requirements for auditor partner rotation and a restriction on auditors taking management positions with a former client. Additionally, the professional accounting bodies issued "Professional statement F1 – professional independence" which required that that an auditor evaluates threats posed to their independence by NAS and the prohibition of the provision of that NAS where the threat cannot be reduced to an acceptable level. The UK also introduced various changes to auditor independence rules despite there being no high profile corporate collapses arising from audit failures. These reforms are described in Fearnley and Beattie (2004).

Where an acquiring firm is completing its valuation of a target firm, they are likely to discount the price where the target firm financial statements are perceived to have less reliability. Given the role of the target auditor in adding to financial statement credibility, it is expected that takeover premiums will be related to the bidder's perception of both auditor independence and auditor reputation. The prior literature on auditor reputation indicates that target firm financial statements will have greater perceived credibility when a large auditor audits the firm. Additionally, previous studies and regulatory concerns over the impact of NAS on the appearance of auditor independence suggest that the perceived quality of financial statements will be reduced when an auditor provides an increasing amount of NAS to an audit client. This leads to the two hypotheses tested in this study:

H1: Takeover premiums are negatively related to the amount of NAS provided by the target firm auditor;

H2: Takeover premiums are positively related to the size of the target firm auditor.

3. Research design

All takeovers for Australian Stock Exchange (ASX) listed firms from 1996 to 2006

are identified from the Connect 4's Mergers and Acquisitions Database. This search

identified 593 takeovers. The exact announcement date of the takeover was found by

searching through announcements made to the ASX available on Huntley's Aspect

FinAnalysis database. It was necessary to exclude takeovers that had insufficient

information available to estimate model (1) (described below), leaving 549 takeovers

in the final sample. A temporal distribution of the sample partitioned by takeover

outcome is provided in Table 1.

INSERT TABLE 1 HERE

There is no discernible trend in takeover activity with the number of takeovers at their

highest in the first and last year of the sample. Across the entire sample,

approximately 67% of offers are completed with a successful deal. It is noticeable,

however, that success rates vary across years. For example, in 2005, 86% of

takeovers succeed compared to 53% in 2000.

Takeover premiums *(Prem)* are defined as the buy-and-hold abnormal return (BHAR)

over the period commencing 60 days prior to the takeover announcement and ending

30 days afterwards. The Core Research Database maintained by the Securities

Industry Research Centre of Asia-Pacific (SIRCA) was used to source target firm

share prices. A zero-one market model is used to calculate BHARs with the return on

the All Ordinaries Accumulation Index used as the reference market return. The

standard market model is not employed to estimate abnormal returns as the low

volume of trading of target firms in the pre-takeover period reduces the ability to

estimate beta. The results are unlikely to be impacted by this methodological

approach as Brown and Warner (1985) document that the power of the zero-one

model to identify abnormal returns is similar to the standard market model.

The testing of hypothesis one requires a proxy for the appearance of target firm

auditor independence (*AUDINDEP*). If target firm auditor independence is an issue

for the acquiring firm, then an assessment of independence is likely to be conducted

using the NAS fee disclosures of the target firm. As stated by Ashbaugh, LaFond and

Mayhew (2003), the perception of independence as viewed by regulators and the

general public is more likely to be captured by the fee ratio than total fees paid by a

firm to an auditor at either the audit firm level or audit office level. The first two

measures of auditor independence are variants of the fee ratio commonly used in

earlier research. Following prior studies, the first proxy of auditor independence takes

the ratio of NAS fees to total fees *(RNASTOT)* for the year prior to the takeover

announcement. The second proxy is the ratio of NAS fees to audit fees *(RNASAUD)*

for the year preceding the announcement of the takeover. The final measure of

auditor independence is the natural logarithm of the NAS fee (*LNNAS*). If higher

NAS fees impair the appearance of auditor independence, then the effect will be a

decline in financial statement credibility and a reduction in the takeover premium.

Hypothesis 1, therefore, predicts a negative coefficient on the three auditor

independence measures. Audit and NAS fees are a required disclosure in Australia

for the entire sample period. The fee data is hand collected from the target firm

financial statements sourced from Huntley's Aspect FinAnalysis database.

Hypothesis 2 is tested using an indicator variable that denotes target firms audited by a large auditor (*AUDREP*).[4] The identity of the auditor for the year preceding the takeover announcement is collected from the target firm financial report. It is predicted that *AUDREP* will enter the regression with a positive coefficient.[5]

The credibility of the financial statements will be reduced where the auditor has issued a qualified audit opinion. A dummy variable (*QUALIFIED*) is used to indicate takeovers where the target auditor issued a qualified audit opinion on the financial statements for the year prior to the takeover. As a control for target firm earnings quality (*EARNQUAL*) we use the ratio of cash flows from operations to profit after tax measured for the financial year preceding the takeover announcement.

Takeover premiums have been extensively researched in earlier studies and have identified a number of additional variables that need to be controlled for in a model of takeover premiums. Cash takeover offers have been documented to be associated with increased takeover premiums (see: Huang and Walkling, 1987; Franks, Harris and Mayer, 1988; Draper and Paudyal, 1999; Da Silva Rosa, Izan, Steinback and Walter, 2000 and Bugeja, 2005). Method of payment (*PAYT*) is controlled using an indicator variable that denotes takeovers where the initial takeover consideration is exclusively cash. The payment type is identified from takeover documents lodged by the bidder with the ASX. The attitude of target firm management to the takeover bid

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[4] Over the period of this study (i.e., 1996 to 2006), the number of large auditing firms decreased from six to four following the merger of Coopers and Lybrand with Price Waterhouse in 1997 and the demise of Arthur Andersen in 2002. The *AUDREP* variable is coded as one for target firms audited by any of these audit firms.
[5] As the purpose of this study is to focus on whether the appearance of auditor independence and reputation influence takeover premiums we do not include measures of actual auditor quality or independence (e.g., discretionary accruals or the rate of client audit report qualifications by audit firm). Instead we focus on measures of independence and reputation easily observable by an investor.

is captured using the initial recommendation of the target firm board to shareholders. Takeovers where the recommendation is to accept the offer are highlighted using a dummy variable (*FRIENDLY*). The recommendation is collected from the Target Statement lodged with the ASX by the target firm.

The Bidders Statement lodged with the ASX is used to determine the bidding firm toehold interest (*TOEHOLD*) in the target at the date of the takeover announcement. As argued by Stulz (1988), offerors with a higher initial interest need to deal with less external shareholders to complete the acquisition and can offer a lower premium. Stulz, Walkling and Song (1990), Bugeja and Walter (1995) and Sudarsanam, Holl and Salami (1996) find results consistent with this prediction for the US, Australia and UK respectively. Competing takeover offers for a target firm are identified using an indicator variable coded as one (*MULTIPLE*) where there is more than one simultaneous bidder for the target.

Following the approach of Schwert (2000), we control for risk by adding target firm leverage to the model. Leverage is measured using the target firm debt-to-equity ratio (*DE*) at the financial year-end prior to the takeover announcement. Target firm performance is included in the model using the firm's return on equity (*ROE*) for the year before the takeover. The market-to-book ratio (*MB*) of the target firm measured two months before the takeover announcement is included to control for target firm growth prospects. We also include the natural logarithm of market capitalisation of the target firm (*TGTSIZE*) at the financial year preceding the takeover as a control for size. Prior research is inconclusive with target size negatively related to takeover premiums in Australia (Anderson, Haynes and Heaney, 1994) and insignificant in the US (Betton, Eckbo and Thorburn, 2009).

The full model estimated is:

$$PREM_i = \alpha_i + \beta_1 AUDINDEP_i + \beta_2 AUDREP_i + \beta_3 QUALIFIED_i + \beta_4 EARNQUAL_i +$$

$$\beta_5 PAYT_i + \beta_6 FRIENDLY_i + \beta_7 TOEHOLD_i + \beta_8 MULTIPLE_i + \beta_9 DE_i + \beta_{10} ROE_i +$$

$$\beta_{11} MB_i + \beta_{12} TGTSIZE_i + \varepsilon_i \qquad (1)$$

where *AUDINDEP* is defined alternately as:

RNASTOT   Ratio of NAS fees to total fees paid to the target firm auditor

RNASAUD   Ratio of NAS fees to audit fees paid to the target firm auditor

LNNAS   Natural log of NAS fees

To control for heteroskedasticity all reported t-statistics from estimating the takeover premium model are based on White's (1980) consistent covariance estimator.

4. Descriptive statistics

Table 2 presents descriptive statistics for the variables incorporated into model (1). Consistent with earlier studies, target shareholders receive significant positive abnormal returns around the announcement of a takeover with the mean and median BHARs being 27% and 23% respectively. On average, NAS fees are 34% of the total fee received by the target firm auditor. This statistic is slightly higher than the ratio of 29% reported in the Australian study by Ruddock, Taylor and Taylor (2006). The statistics for *RNASAUD* indicate that the average fee paid for NAS is approximately equal to the audit fee, raising the possibility that financial statement users may perceive an impairment of audit independence. However, NAS fees have a wide

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range relative to audit fees, ranging from zero to being over twelve times as large. Big 4 auditors are engaged by 75% of target firms.

The results on the control variables show that in 67% of takeovers the consideration offered is exclusively cash. Competing bidders are present in 25% of takeovers and the target firm board recommends bid acceptance in just over half of the takeover contests. The statistics for return on equity are skewed to the left with the median and mean 5% and 0% respectively. Approximately 8% of target firms are issued with a qualified audit report in the year prior to the takeover.

5. Results

Correlation coefficients between the dependent and independent variables included in model (1) are presented in Table 3. The correlation between takeover premiums and the three measures of auditor independence do not support Hypothesis 1. The only significant correlation (*LNNAS*) is positive and not the predicted negative sign. As expected, there is a high degree of correlation between the three measures of auditor independence. Consistent with Hypothesis 2 the correlation between the takeover premium and auditor reputation is positive and significant. There is a significant positive correlation between the use of large audit firms and the three auditor independence measures. Target firm size is also positively correlated with the use of Big 4 auditors and the purchase of NAS. Interestingly, the use of a reputable auditor is positively correlated with the payment of cash consideration. A possible interpretation of this result is that target firm financial statements audited by reputable auditors have greater credibility resulting in the bidder having more confidence to offer cash as they are more certain to the value of the target firm. This explanation is

consistent with the information asymmetry models of Hansen (1987) and Fishman (1989).

INSERT TABLE 3 HERE

Although there is significant correlation between various control variables, the size of the correlation indicates that multicollinearity will not be a problem with the estimation of model (1) (Gujarati, 1995). As found in prior literature, takeover premiums are significantly higher where cash is offered as consideration. Takeover premiums are negatively correlated with the issue of a qualified audit report. The issue of a qualified audit report is less likely when the auditor is a Big 4 firm and the target firm is large. The results also show that a higher acquiring firm toehold is significantly correlated with friendly acquisitions, cash payment and a single bidder takeover.

The results of estimating the regression model of takeover premiums are presented in Table 4. Given the significant correlation between the various audit independence measures reported in Table 3, the model is estimated separately for each measure of audit independence.[6] The test of Hypothesis 1, which uses sequentially each proxy for audit independence, is shown in columns (1) through (3). The results provide no support for Hypothesis 1 with each coefficient being insignificant. The findings from testing Hypothesis 2 are presented in column (4). The coefficient on the large auditor dummy variable is positive and significant, indicating that target shareholders receive an addition return of 6.5% where a reputable auditor audits the target firm. Target

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[6] The conclusion from the results are unchanged if the two hypotheses are tested simultaneously in the one model using in turn each auditor independence variable.

firm size is positively related to target firm abnormal returns in columns (1) and (2). When the auditor reputation variable is incorporated into the model target size is insignificant. No relationship is found between takeover premiums and either the proxy for earnings quality or the audit report qualification dummy.

INSERT TABLE 4 HERE

Confirming the results of prior studies, target shareholders receive higher abnormal returns when they are offered cash consideration and when the bidding firm has a lower toehold. The nature of the takeover (i.e., hostile vs friendly) is unrelated to takeover premiums. Three of the target firm financial variables report significant coefficients in Table 4. Target firm abnormal returns are positively related to the target firm debt-to-equity ratio and negatively associated with the target firm return on equity and market-to-book ratios. The negative impact of market-to-book is consistent with bidders offering a lower premium when the value of the target represents growth options, as the potential for overpayment is higher in these circumstances. The positive relationship between takeover premiums and target firm leverage is consistent with the models in Israel (1991) and Israel (1992) and the results in Raad, Ryan and Sinkey (1999).

5.1 Additional analysis

Friendly vs hostile takeovers

In a friendly acquisition, the target firm frequently provides the bidding firm with permission to conduct 'due diligence.' For example, in the friendly takeover bid for Qantas Airways Ltd by Airline Partners Australia, Qantas indicates in its Target

Statement "the Board granted due diligence and management access to the consortium investors after obtaining confidentiality undertakings."[7] In these circumstances, the bidding firm needs to rely less on the target firm auditors to add to financial statement credibility. As a result, it is expected that the effects of Hypothesis 1 and 2 will be greatest in hostile takeovers. To test if this is the case the sample is partitioned by the recommendation of the target firm board and model (1) re-estimated after excluding the director recommendation dummy variable (i.e., *FRIENDLY*). The results are given in Table 5. Panel A provides the results for friendly takeovers, whilst Panel B provides the findings in hostile bids. The regression model is again estimated separately using each of the auditor independence variables.

INSERT TABLE 5 HERE

Once more the results provide no support for Hypothesis 1 with insignificant findings on the three proxies of auditor independence in both the reject and accept sub-samples. If financial statement credibility is decreased by the provision of greater NAS, this effect should have been at its highest in hostile takeovers. The results, however, provide no evidence that NAS influences the premium offered.

A comparison of Panels A and B of Table 5 shows that the impact of auditor reputation is only significant in hostile takeovers. This finding indicates that where bidders are unable to make their own assessment on financial statement credibility (i.e., hostile bids); the reputation of the target firm auditor provides some degree of reassurance when making their pricing decision. The audit qualification variable is

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[7] Qantas Airways Limited, Target Statement, p 13. Available on the ASX website: http://www.asx.com.au

insignificant irrespective of the attitude of the target firm board. Although the earnings quality measure is significant in both sub-samples it is positively related to takeover premiums in friendly bids and negatively associated when the target board recommends rejection. These findings are inconsistent with the US findings in Raman, Shivakamur and Tamayo (2008) who report a negative association between earnings quality and takeover premiums in negotiated deals. A possible interpretation of our findings is that in friendly takeovers the bidder through due diligence is able to substantiate the level of earnings quality and is willing to pay a higher premium due to the lower risk of earnings being realised as cash flows post- takeover. In contrast, in hostile bids as the bidding firm cannot access the records of the target firm it discounts the value of high quality earnings due to its inability to verify the accuracy of the information.[8]

The association between takeover premiums and both target leverage and market-to-book ratio are consistent with those presented in Table 4 using the complete sample. Interestingly the results and significance on a number of the other control variables differ between hostile and friendly bids. In friendly takeovers there is a negative association between target firm profitability and takeover premiums. Target firm performance however is insignificant in hostile bids. Further, in hostile bids takeover premiums are higher in takeovers where: cash is offered as payment, the bidder has a lower toehold and the target firm is larger. These variables are however insignificant in friendly takeovers. The results in Henry (2005) provide a partial explanation for the difference in results across the recommendation of the target firm board. That

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[8] These findings for the earnings quality measure must be interpreted in the light of the unsophisticated measure of earnings quality employed in this study. As assessing the association between earnings quality and takeover premiums is not the primary purpose of this study we leave it to further research to examine the relationship between more sophisticated earnings quality measures (e.g., Dechow and Dichev, 2002) and takeover premiums.

study finds that accept recommendations in Australian takeovers are significantly more likely when equity is offered as payment and the acquiring firm has a higher toehold. It is therefore expected that the impact on premiums of cash payment and low toeholds will be higher in the reject sub-sample.

Pre- and post- increased audit failures

The spectacular audit failures that occurred in the early 2000s led to a wave of new regulation in many countries that placed restrictions on the provision of NAS by auditors. It is likely that these audit failures both damaged the reputation of large accounting firms and highlighted the potential independence issues resulting from the provision of NAS. If these highly publicised audit failures focused bidding firms on the amount of NAS provided by target auditors the greatest negative effect of NAS on takeover premiums will be found in takeovers subsequent to the audit failures. Furthermore, the perception that large audit firms had a superior reputation is likely to have been significantly tarnished following the adverse publicity surrounding these high profile audit failures. As a result of this tarnished brandname it is possible that bidding firms would no longer be willing to pay an additional premium for target firms audited by a Big 4 auditor.

To test whether the results of testing the two hypotheses are sensitive to whether the takeover was announced before or after the auditing scandals, the sample was partitioned into takeovers announced before 2002 and those announced from 2002 onwards. Model (1) was estimated separately for each group and the findings are presented in Table 6. The results pre- and post- the audit scandals are in Panels A and B respectively.

INSERT TABLE 6 HERE

Once again there is no support for Hypothesis 1 with all three measures of auditor independence insignificant both before and after 2002. The impact of auditor reputation on takeover premiums, however, is sensitive to the time period during which the takeover is announced. Prior to the regulatory reforms bidding firms paid an additional 4% premium where the target firm was audited by a Big 4 firm. In contrast, subsequent to the regulatory changes the audit reputation variable is insignificant. This result indicates that in the 'minds' of bidding firms the audit scandals diminished the reputation of the large auditing firms to the extent that the financial statements of their auditees were no more credible than those of other auditors. For the control variables it is interesting to note that multiple bidders, target firm size and a lower toehold result in significantly higher abnormal returns only in the earlier time period, whilst return on equity is only significant post- 2001.

5.2 Sensitivity tests

Deletion of zero NAS observations

Approximately 12.8% of target firms do not purchase any NAS from their auditors. To assess if the lack of a significant finding on the auditor independence measures arises from the inclusion of these observations, model (1) is estimated after deleting those firms that do not purchase any NAS. The results (not tabulated) are qualitatively unchanged from those shown in Table 4, although the target firm

market-to-book ratio is no longer significant. The coefficients on the auditor

independence variables remained insignificant.[9]

Target firms with 'high' NAS fees

To determine if auditor independence concerns only impacts on takeover premiums

when NAS fees are relatively high, the sample is partitioned at the median for each of

the proxies for auditor independence. Model (1) is then estimated for each proxy

using only those observations above the median. The results (not tabulated) showed

negative coefficients on each auditor independence proxy, the t-statistics were not

significant, however, at conventional levels.[10]

Large vs small auditors

To examine if the effect of NAS on the appearance of auditor independence differs

between Big4/non-Big 4 auditors, the sample was partitioned by auditor size and

model (1) estimated for each group. For both types of auditor, the results for all three

measures of auditor independence were insignificant.

Identical auditors

Where the same auditor audits the target and bidding firm it is expected that the

acquiring firm will be more confident of the level of credibility of the target firm

financial statements. To examine if having an identical auditor impacts on takeover

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[9] Similar to the approach reported in Tables 5 and 6 the sample with non-zero NAS fees was also partitioned by the recommendation of the target board and announcement date and the model estimated for each grouping. The coefficients on *RNASTOTAL, RNASAUDIT and LNNAS* were insignificant in each of the models estimated.

[10] The sample was also partitioned into quartiles for each of the auditor independence variables and the takeover premium model was estimated for the highest quartile. The coefficients on the auditor independence measures continued to be insignificant.

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premiums model (1) was re-estimated including an additional dummy variable denoting identical auditors. The coefficient on this variable was insignificant.[11]

Different auditor quality between target and bidder

Subsequent to a successful takeover most target firms will engage the auditor of the acquiring firm (Firth, 1999). If target firms share prices are discounted because of the lower quality of auditor it is possible that target firms audited by a small auditor will experience higher abnormal returns when it receives a takeover from a bidder with a large auditor. To test this conjecture we re-estimated model (1) after including a dummy variable denoting takeovers where the acquiring firm engages a large auditor and the target firm uses a small auditor.[12] This variable was insignificant.[13]

6. Discussion and conclusions

Corporate regulators worldwide have acted in recent years to address concerns that the provision of NAS by auditors to their audit clients has impaired auditor independence. This action has been taken despite a lack of conclusive research evidence that NAS impairs auditor independence "in fact." This study extends this line of research by assessing if NAS impairs the "appearance" of auditor independence, as this second dimension of auditor independence is of concern to regulators but has received less attention in academic research. The context used in this study to assess the impact of NAS on the appearance of auditor independence is the takeover of a publicly listed company as this involves a major corporate investment decision. The results presented show no association between NAS fees

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[11] To conduct this additional estimation is was necessary to exclude 233 takeovers where the bidding firm was not listed. Of the remaining 316 takeovers identical auditors were present in 67 (21%).
[12] This analysis was conducted only on those takeovers where the bidding firm was listed on the ASX.
[13] We also tested using a dummy variable if targets earned lower abnormal returns if they had a Big 4 auditor and the acquiring firm had a non-Big 4 auditor. The result was insignificant.

paid by the target firm to their auditor and takeover premiums. This finding indicates that bidding firms do not believe that higher NAS impacts financial statement quality and credibility or, if it does; the reduction in credibility is insufficient to influence their pricing decision. It is left to subsequent research to assess if this finding is robust in other countries. Future research can also investigate whether higher NAS fees influence investors' decisions and actions in other contexts and whether the level of sophistication of the investor perhaps drives any influence.

This study also analysed if target firms with an auditor with a better reputation received a higher takeover premium due to the perceived greater financial statement credibility. The results indicated that takeover premiums are significantly higher when a large auditor audits the target firm. This result however is only significant in the period prior to the corporate failures that occurred in the early part of this century. This finding is consistent with the accounting scandals of the early 2000s tarnishing the reputation of the large auditor firms to the extent that the credibility of target firm financial statements was considered equivalent across auditor firm size.

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Table 1

Time distribution of sample

Takeovers announced for ASX listed targets between 1996 and 2006 are identified from the Connect 4 Mergers and Acquisitions Database. The year of takeover refers to the year in which the takeover was announced. The outcome of the takeover is identified from announcements made to the ASX.

Year	Successful takeovers	Unsuccessful takeovers	Total takeovers
1996	44	17	61
1997	32	7	39
1998	35	18	53
1999	30	17	47
2000	31	27	58
2001	32	18	50
2002	26	18	44
2003	33	16	49
2004	26	15	41
2005	32	5	37
2006	47	23	70
Total	368	181	549

Table 2

Descriptive statistics

Descriptive statistics for the variables included in model (1). *PREM* is the BHAR over the event window (-60,+30) days around the takeover announcement. Auditor independence is measured using three variables taking fee data collected for the year preceding the takeover announcement: *RNASTOT* is the ratio of NAS fees to total fees, *RNASAUD* is the ratio of NAS fees to audit fees and *LNNAS* is the natural logarithm of NAS fees. *AUDREP* is a binary variable highlighting firms audited by a Big 4 auditor. *QUALIFIED* is an indicator variable noting target firms that received a qualified audit report for the financial year prior to the takeover, *PAYT* is an indicator variable set to 1 if the payment form is exclusively cash, *FRIENDLY* is an indicator variable set to 1 if the directors recommend bid acceptance and *MULTIPLE* is an indicator variable set to 1 if there are multiple bidders for the target firm. *TOEHOLD* is the ownership interest of the bidding firm in the target at the announcement of the takeover. The following variables are measured as at the financial year-end before the bid announcement: *EARNQUAL* is the ratio of cash flow from operations to net profit after tax, *TGTSIZE* is the target firm's market capitalisation, *DE* is the target firm's debt-to-equity ratio, *ROE* is the target firm's return on equity ratio and *MB* is the target firm's market-to-book ratio.

Variable	Mean	Median	Max	Min	Std Dev
PREM	0.2729	0.2300	2.6000	-1.1670	0.3755
RNASTOT	0.3442	0.3202	0.9247	0.0000	0.2404
RNASAUD	0.9170	0.4710	12.2800	0.0000	1.3846
LNNAS	9.5123	10.6690	15.5244	0.0000	3.9358
AUDREP	0.7557	1.0000	1.0000	0.0000	0.4299
QUALIFIED	0.0841	0.0000	1.0000	0.0000	0.2778
EARNQUAL	1.5795	0.8294	243.2424	-92.9231	13.3303
PAYT	0.6737	1.0000	1.0000	0.0000	0.4684
FRIENDLY	0.5134	0.0000	1.0000	0.0000	0.4998
TOEHOLD	0.1687	0.1272	0.9759	0.0000	0.2121
MULTIPLE	0.2462	0.0000	1.0000	0.0000	0.4299
DE	1.2854	0.7243	77.0492	-8.1130	4.8934
ROE	-0.0071	0.0541	41.1950	-24.7437	2.1900
MB	2.6947	1.2369	218.4145	-2.7197	13.5685
TGTSIZE	17.8251	17.7438	23.6173	13.9196	1.7674

Table 3

Correlation Coefficients and two-tailed *p*-values for the dependent and independent variables in the takeover premium model

Correlation coefficients for the variables in model (1). *PREM* is the BHAR over the event window (-60,+30) days around the takeover announcement. Auditor independence is measured using three variables taking fee data collected for the year preceding the takeover announcement: *RNASTOT* is the ratio of NAS fees to total fees, *RNASAUD* is the ratio of NAS fees to audit fees and *LNNAS* is the natural logarithm of NAS fees. *AUDREP* is a binary variable highlighting firms audited by a Big 4 auditor. *QUALIFIED* is an indicator variable noting target firms that received a qualified audit report for the financial year prior to the takeover, *PAYT* is an indicator variable set to 1 if the payment form is exclusively cash, *FRIENDLY* is an indicator variable set to 1 if the directors recommend bid acceptance and *MULTIPLE* is an indicator variable set to 1 if there are multiple bidders for the target firm. *TOEHOLD* is the ownership interest of the bidding firm in the target at the announcement of the takeover. The following variables are measured as at the financial year-end before the bid announcement: *EARNQUAL* is the ratio of cash flow from operations to net profit after tax, *TGTSIZE* is the target firm's market capitalisation, *DE* is the target firm's debt-to-equity ratio, *ROE* is the target firm's return on equity ratio and *MB* is the target firm's market-to-book ratio. Pearson correlations are below the diagonal and Spearman is above.

	PREM	RNASTOT	RNASAUD	LNNAS	AUDREP	QUALIFIED	ACCQUAL	PAYT	FRIENDLY	TOEHOLD	MULTIPLE	DE	ROE	MB	TGTSIZE
PREM	1	.069	.069	.130***	0.080*	-.113**	.062	.181**	0.033***	.019	.044	.064	.003	-.047	.135***
RNASTOT	.029	1	1.000***	.766***	.147***	-.038	-.007	-.013	-.037	.005	.012	.047	.101**	.015	.187***
RNASAUD	-.018	.777***	1	.766***	.147***	-.038	-.007	-.013	-.037	.005	.012	.047	.101**	.015	.187***
LNNAS	.076	.715***	.413***	1	.327***	-.089**	0.081*	.053	-.005	-.030	.006	.221***	.172***	-.011	.509***
AUDREP	.098**	.148***	.120***	.227***	1	-0.072*	.013	0.081*	.022	0.071*	.065	.029	0.071*	-.061	.241***
QUALIFIED	-0.086*	-.034	-.024	-.059	-0.072*	1	-.085**	-0.073*	.067	-.036	.043	.015	-.224***	-.005	-.217***
ACCQUAL	.030	-.030	-.020	-.007	-0.075*	-.008	1	.024	-.011	-.033	.003	.038	.278***	.048	.199***
PAYT	.150***	-.016	-.013	.028	0.081*	-0.073*	.024	1	.019	.141***	0.080*	0.080*	.024	-.107**	-.017
FRIENDLY	.031	-.037	-.001	-.011	.022	.067	-0.071*	.019	1	.150***	-.180***	0.073*	0.078*	.005	.018
TOEHOLD	-.028	-.012	-.011	-.004	.047	-.030	.010	.101**	0.080**	1	-.109**	.123***	-.017	-.007	-.041
MULTIPLE	.056	.000	-.019	-.009	.065	.043	-.039	0.080*	-.180***	-.107**	1	.065	-.033	.023	0.079*
DE	.011	.034	.050	-.014	.036	.117***	-.006	-.034	.044	.031	-.031	1	0.082*	.202***	.111***
ROE	-.059	.041	.019	.060	.025	.015	.004	.007	.026	-.056	-.024	.147***	1	.146***	.360***
MB	-.032	-.002	.020	-.051	.032	.068	-.010	-.019	.017	.035	-.046	.493***	.067	1	.281***
TGTSIZE	.049	.174***	.133***	.335***	.216***	-.191***	.024	-.036	.008	-.006	0.080*	-.092**	.058	-.063	1

*** Significant at the 1% level ** Significant at the 5% level * Significant at the 10% level

Table 4

Model of takeover premiums and auditor independence and quality: full sample

Results of estimating model (1): $PREM_i = \alpha_i + \beta_1 AUDINDEP_i + \beta_2 AUDREP_i + \beta_3 QUALIFIED_i + \beta_4 EARNQUAL_i + \beta_5 PAYT_i + \beta_6 FRIENDLY_i + \beta_7 TOEHOLD_i + \beta_8 MULTIPLE_i + \beta_9 DE_i + \beta_{10} ROE_i + \beta_{11} MB_i + \beta_{12} TGTSIZE_i + \varepsilon_i$. *PREM* is the BHAR over the event window (-60,+30) days around the takeover announcement. Auditor independence (*AUDINDEP*) is measured using three variables taking fee data collected for the year preceding the takeover announcement: *RNASTOT* is the ratio of NAS fees to total fees, *RNASAUD* is the ratio of NAS fees to audit fees and *LNNAS* is the natural logarithm of NAS fees. *AUDREP* is a binary variable highlighting firms audited by a Big 4 auditor. *QUALIFIED* is an indicator variable noting target firms that received a qualified audit report for the financial year prior to the takeover, *PAYT* is an indicator variable set to 1 if the payment form is exclusively cash, *FRIENDLY* is an indicator variable set to 1 if the directors recommend bid acceptance and *MULTIPLE* is an indicator variable set to 1 if there are multiple bidders for the target firm. *TOEHOLD* is the ownership interest of the bidding firm in the target at the announcement of the takeover. The following variables are measured for the financial year-end before the bid announcement: *EARNQUAL* is the ratio of cash flow from operations to net profit after tax, *TGTSIZE* is the target firm's market capitalisation, *DE* is the target firm's debt-to-equity ratio, *ROE* is the target firm's return on equity ratio and *MB* is the target firm's market-to-book ratio. *t*-statistics are presented in parentheses.

Variable	(1)	(2)	(3)	(4)
Intercept	-0.0756	-0.0835	-0.0598	-0.0649
	(-0.56)	(-0.61)	(-0.44)	(-0.48)
RNASTOT	0.0267	-	-	-
	(0.37)			
RNASAUD	-	-0.0077	-	-
		(-0.33)		
LNNAS	-	-	0.0054	-
			(1.22)	
AUDREP	-	-	-	0.0647
				(1.78)*
QUALIFIED	-0.0923	-0.0927	-0.0928	-0.0888
	(-1.62)	(-1.63)	(-1.64)	(-1.56)
EARNQUAL	0.0008	0.0008	0.0008	0.0010
	(0.69)	(0.70)	(0.69)	(0.82)
PAYT	0.1105	0.1105	0.1083	0.1057
	(3.11)***	(3.10)***	(3.04)***	(2.98)***
FRIENDLY	0.0251	0.0241	0.0257	0.0234
	(0.80)	(0.77)	(0.82)	(0.76)
TOEHOLD	-0.0467	-0.0473	-0.0464	-0.0501
	(-1.75)*	(-1.78)*	(-1.77)*	(-1.84)*
MULTIPLE	0.0393	0.0380	0.0414	0.0357
	(1.16)	(1.12)	(1.22)	(1.05)
DE	0.0058	0.0061	0.0054	0.0057
	(2.01)**	(2.13)**	(1.99)**	(2.04)**
ROE	-0.0140	-0.0140	-0.0141	-0.0140
	(-2.33)**	(-2.36)**	(-2.31)**	(-2.25)**
MB	-0.0035	-0.0036	-0.0033	-0.0035
	(-2.17)**	(-2.27)***	(-2.15)**	(-2.26)**
TGTSIZE	0.0138	0.0152	0.0106	0.0112
	(1.92)*	(2.08)*	(1.39)	(1.53)
Adjusted R^2	0.0255	0.0260	0.0281	0.0305
F-stat	2.298***	2.326***	2.433**	2.564***

*** Significant at the 1% level   ** Significant at the 5% level
* Significant at the 10% level

Table 5
Model of takeover premiums and auditor independence and quality partitioned by the attitude of the target board to the takeover

Results of estimating model (1): $PREM_i = \alpha_i + \beta_1 AUDINDEP_i + \beta_2 AUDREP_i + \beta_3 QUALIFIED_i + \beta_4 EARNQUAL_i + \beta_5 PAYT_i + \beta_6 TOEHOLD_i + \beta_7 MULTIPLE_i + \beta_8 DE_i + \beta_9 ROE_i + \beta_{10} MB_i + \beta_{11} TGTSIZE_i + \varepsilon_i$ separately for takeovers where the target board recommends acceptance (Panel A) and rejection (Panel B). *PREM* is the BHAR over the event window (-60,+30) days around the takeover announcement. Auditor independence (*AUDINDEP*) is measured using three variables taking fee data collected for the year preceding the takeover announcement: *RNASTOT* is the ratio of NAS fees to total fees, *RNASAUD* is the ratio of NAS fees to audit fees and *LNNAS* is the natural logarithm of NAS fees. *AUDREP* is a binary variable highlighting firms audited by a Big 4 auditor. *QUALIFIED* is an indicator variable noting target firms that received a qualified audit report for the financial year prior to the takeover, *PAYT* is an indicator variable set to 1 if the payment form is exclusively cash, and *MULTIPLE* is an indicator variable set to 1 if there are multiple bidders for the target firm. *TOEHOLD* is the ownership interest of the bidding firm in the target at the announcement of the takeover. The following variables are measured for the financial year-end before the bid announcement: *EARNQUAL* is the ratio of cash flow from operations to net profit after tax, *TGTSIZE* is the target firm's market capitalisation, *DE* is the target firm's debt-to-equity ratio, *ROE* is the target firm's return on equity ratio and *MB* is the target firm's market-to-book ratio. *t*-statistics are presented in parentheses.

Variable	(1)	(2)	(3)	(4)
Panel A: *Accept recommendation*				
Intercept	0.0993	0.0864	0.1244	0.1112
	(0.37)	(0.32)	(0.45)	(0.42)
RNASTOT	0.0058	-	-	-
	(0.52)			
RNASAUD	-	-0.0104	-	-
		(-0.30)		
LNNAS	-	-	0.0038	-
			(0.60)	
AUDREP	-	-	-	0.0573
				(1.08)
QUALIFIED	-0.1027	-0.1053	-0.1040	-0.1020
	(-1.27)	(-1.31)	(-1.28)	(-1.27)
EARNQUAL	0.0038	0.0037	0.0038	0.0039
	(2.16)**	(2.17)**	(2.19)**	(2.23)**
PAYT	0.0692	0.0684	0.0691	0.0658
	(1.33)	(1.31)	(1.33)	(1.27)
TOEHOLD	-0.0812	-0.0820	-0.0802	-0.0861
	(-1.02)	(-1.04)	(-1.01)	(-1.07)
MULTIPLE	0.0105	0.0083	0.0137	0.0085
	(0.21)	(0.17)	(0.27)	(0.17)
DE	0.0058	0.0062	0.0054	0.0058
	(2.11)**	(2.18)**	(2.01)**	(2.15)**
ROE	-0.0151	-0.0152	-0.0152	-0.0151
	(-2.73)***	(-2.77)***	(-2.68)***	(-2.64)***
MB	-0.0040	-0.0042	-0.0037	-0.0040
	(-2.21)**	(-2.29)**	(-2.08)**	(-2.27)**
TGTSIZE	0.0081	0.0095	0.0047	0.0053
	(0.56)	(0.66)	(0.29)	(0.36)
Adjusted R^2	0.0075	0.0091	0.0088	0.0113
F-stat	1.213	1.261	1.250	1.323

*** Significant at the 1% level** Significant at the 5% level
* Significant at the 10% level

Table 5 - continued

Variable	(1)	(2)	(3)	(4)
Panel B: *Reject recommendation*				
Intercept	0.1540	-0.1567	-0.1501	-0.1468
	(-1.03)	(-1.04)	(-1.02)	(-0.99)
RNASTOT	0.0367	-	-	-
	(0.40)			
RNASAUD	-	-0.0028	-	-
		(-0.15)		
LNNAS	-	-	0.0041	-
			(0.67)	
AUDREP	-	-	-	0.0560
				(1.76)*
QUALIFIED	-0.0441	-0.0410	-0.0459	-0.0387
	(-0.55)	(-0.51)	(-0.57)	(-0.47)
EARNQUAL	-0.0001	-0.0010	-0.0010	-0.0087
	(-2.45)**	(-2.55)**	(-2.61)***	(-2.01)**
PAYT	0.1496	0.1508	0.1481	0.1467
	(3.09)***	(3.13)***	(3.04)***	(3.05)***
TOEHOLD	-0.0393	-0.0395	-0.0393	-0.0413
	(-2.17)**	(-2.21)**	(-2.21)**	(-2.29)**
MULTIPLE	0.0652	0.0643	0.0655	0.0615
	(1.42)	(1.40)	(1.43)	(1.33)
DE	0.0396	0.0396	0.0365	0.0361
	(1.82)*	(1.81)*	(1.69)*	(1.66)*
ROE	0.0394	0.0395	0.0353	0.0360
	(1.37)	(1.36)	(1.24)	(1.25)
MB	-0.0138	-0.0138	-0.0128	-0.0126
	(-1.81)*	(-1.81)*	(-1.69)*	(-1.66)*
TGTSIZE	0.0155	0.0165	0.0139	0.0137
	(2.00)*	(2.12)**	(1.82)*	(1.73)*
Adjusted R^2	0.0571	0.0566	0.0583	0.0610
F-stat	2.588***	2.572***	2.621***	2.701***

*** Significant at the 1% level
** Significant at the 5% level
* Significant at the 10% level

Table 6
Model of takeover premiums and auditor independence and quality partitioned by announcement before and after publicised audit failures

Results of estimating model (1): $PREM_i = \alpha_i + \beta_1 AUDINDEP_i + \beta_2 AUDREP_i + \beta_3 QUALIFIED_i + \beta_4 EARNQUAL_i + \beta_5 PAYT_i + \beta_6 FRIENDLY_i + \beta_7 TOEHOLD_i + \beta_8 MULTIPLE_i + \beta_9 DE_i + \beta_{10} ROE_i + \beta_{11} MB_i + \beta_{12} TGTSIZE_i + \varepsilon_i$ separately for takeovers from 1996-2001 (Panel A) and 2001-2006 (Panel B). . *PREM* is the BHAR over the event window (-60,+30) days around the takeover announcement. Auditor independence (*AUDINDEP*) is measured using three variables taking fee data collected for the year preceding the takeover announcement: *RNASTOT* is the ratio of NAS fees to total fees, *RNASAUD* is the ratio of NAS fees to audit fees and *LNNAS* is the natural logarithm of NAS fees. *AUDREP* is a binary variable highlighting firms audited by a Big 4 auditor. *QUALIFIED* is an indicator variable noting target firms that received a qualified audit report for the financial year prior to the takeover, *PAYT* is an indicator variable set to 1 if the payment form is exclusively cash, *FRIENDLY* is an indicator variable set to 1 if the directors recommend bid acceptance and *MULTIPLE* is an indicator variable set to 1 if there are multiple bidders for the target firm. *TOEHOLD* is the ownership interest of the bidding firm in the target at the announcement of the takeover. The following variables are measured for the financial year-end before the bid announcement: *EARNQUAL* is the ratio of cash flow from operations to net profit after tax, *TGTSIZE* is the target firm's market capitalisation, *DE* is the target firm's debt-to-equity ratio, *ROE* is the target firm's return on equity ratio and *MB* is the target firm's market-to-book ratio. *t*-statistics are presented in parentheses.

Variable	(1)	(2)	(3)	(4)
Panel A: *1996-2001*				
Intercept	-0.6035	-0.6198	-0.6095	-0.5570
	(-3.02)***	(-3.04)***	(-3.00)***	(-2.69)**
RNASTOT	-0.0583	-	-	-
	(-0.53)			
RNASAUD	-	-0.0127	-	-
		(-0.44)		
LNNAS	-	-	-0.0030	-
			(-0.39)	
AUDREP	-	-	-	0.0406
				(3.44)***
QUALIFIED	-0.0276	-0.0301	-0.0296	-0.0272
	(-0.37)	(-0.40)	(-0.39)	(-0.37)
EARNQUAL	0.0004	0.0004	0.0004	0.0006
	(0.33)	(0.33)	(0.36)	(0.47)
PAYT	0.1501	0.1493	0.1494	0.1448
	(3.22)***	(3.19)***	(3.16)***	(3.16)***
FRIENDLY	-0.0161	-0.0145	-0.0147	-0.0159
	(-0.40)	(-0.37)	(-0.37)	(-0.39)
TOEHOLD	-0.0513	-0.0514	-0.0508	-0.0531
	(-2.31)**	(-2.31)**	(-2.25)**	(-2.31)**
MULTIPLE	0.1135	0.1114	0.1131	0.1054
	(2.30)**	(2.31)**	(2.30)**	(2.12)**
DE	0.0559	0.0561	0.0571	0.0544
	(4.52)***	(4.53)***	(4.66)***	(4.37)***
ROE	0.0362	0.0307	0.0362	0.0332
	(0.61)	(0.56)	(0.61)	(0.58)
MB	-0.0502	-0.0501	-0.0513	-0.0490
	(-4.75)***	(-4.72)***	(-4.85)***	(-4.61)***
TGTSIZE	0.0460	0.0465	0.0468	0.0447
	(4.13)***	(4.03)***	(3.81)***	(0.96)
Adjusted R^2	0.1354	0.1369	0.1347	0.1364
F-stat	5.370***	5.428***	5.343***	5.409***

*** Significant at the 1% level ** Significant at the 5% level * Significant at the 10% level

Table 6 - continued

Variable	(1)	(2)	(3)	(4)
Panel B: *2002-2006*				
Intercept	0.2989	0.3043	0.3030	0.3029
	(1.60)	(1.63)	(1.59)	(1.63)
RNASTOT	0.0504	-	-	-
	(0.53)			
RNASAUD	-	-0.0051	-	-
		(-0.29)		
LNNAS	-	-	0.0031	-
			(0.56)	
AUDREP	-	-	-	0.0082
				(0.14)
QUALIFIED	-0.1005	-0.1051	-0.1031	-0.1039
	(-1.25)	(-1.30)	(-1.27)	(-1.29)
EARNQUAL	-0.0001	-0.0002	-0.0001	-0.0001
	(-0.04)	(-0.05)	(-0.03)	(-0.04)
PAYT	0.1459	0.1594	0.1496	0.1623
	(2.70)***	(2.81)***	(2.47)**	(2.72)***
FRIENDLY	0.0456	0.0430	0.0477	0.0436
	(0.95)	(0.90)	(0.97)	(0.92)
TOEHOLD	-0.0819	-0.0811	-0.0827	-0.0811
	(-0.82)	(-0.81)	(-0.82)	(-0.81)
MULTIPLE	-0.0419	-0.0432	-0.0403	-0.0422
	(-0.96)	(-0.98)	(-0.94)	(-0.99)
DE	0.0343	0.0429	0.0386	0.0408
	(2.11)**	(2.27)**	(2.12)**	(2.36)**
ROE	-0.0133	-0.0133	-0.0134	-0.0133
	(-2.62)***	(-2.69)***	(-2.62)***	(-2.67)***
MB	-0.0363	-0.0308	-0.0345	-0.0329
	(-2.99)***	(-3.15)***	(-3.29)***	(-3.12)***
TGTSIZE	-0.0043	-0.0033	-0.0053	-0.0038
	(-0.45)	(-0.35)	(-0.50)	(-0.39)
Adjusted R^2	0.0307	0.0299	0.0311	0.0298
F-stat	0.654	0.636	0.663	0.634

*** Significant at the 1% level
** Significant at the 5% level
* Significant at the 10% level