

THREATS TO AUDITOR INDEPENDENCE: THE IMPACT OF NON-AUDIT SERVICES, TENURE AND ALUMNI AFFILIATION

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THREATS TO AUDITOR INDEPENDENCE: THE IMPACT OF NON-AUDIT SERVICES, TENURE AND ALUMNI AFFILIATION

Abstract: In the wake of the recent corporate collapses in the US, Australia and elsewhere, regulatory attention has been drawn to the issues of auditor provided non-audit services (NAS) and auditor-client relationships. This study contributes to the current debate on auditor independence by providing evidence regarding the relationship between non-audit services and audit firm tenure, audit partner tenure and alumni affiliation. The results suggest that lengthy audit firm tenure and alumni affiliation are contributing factors that prompt auditees to purchase NAS from their current auditors. However, this joint purchase of audit and NAS will be avoided where there are high agency costs associated with the client. The results of analysis using going concern audit opinion prediction models are consistent with NAS and audit partner tenure being potential threats to auditor independence, while the other two proposed auditor-client relationships, audit firm tenure and alumni affiliation are not found to have a negative effect on auditor independence. Further, no joint effect is documented between economic bonds (NAS) and relationship bonds (audit firm tenure, audit partner tenure, alumni affiliation). As such, this study provides evidence in support of the mandatory audit partner rotation and restrictions on auditor provided NAS. However, it also indicates that the prohibition of lengthy audit firm tenure or alumni affiliations may not be necessary.

1. Introduction

Auditor independence is a cornerstone of the auditing profession, a crucial element in the statutory corporate reporting process and a key prerequisite for the adding of value to an audited financial statement (Mautz and Sharaf, 1961). However, recent accounting scandals, involving corporations such as Enron in the US and HIH Insurance in Australia, have cast doubt over the independence of auditors and overall value of auditing. In particular, the economic dependence resulting from the provision of non-audit services (NAS hereafter), the familiarity developed from lengthy auditor tenure, and personal relationships built through alumni employees have been alleged to contribute to this erosion of auditor independence. In order to restore public confidence, policies such as mandatory audit partner rotation, prohibition/disclosure of certain NAS have been initiated by regulators and accounting bodies in the US, Australia and elsewhere (Sarbanes Oxley Act, 2002; SEC 2000, CLERP 9, 2004 and Corporations Act 2001).

These legislative interventions, however, have occurred despite limited and mixed empirical evidence of these proposed threats to auditor independence. Furthermore, some basic questions underlying this debate remain unresolved. For example, “What factors influence a company’s decision to purchase NAS from its incumbent auditor?”, “How do the economic bonds and social bonds between auditors and clients affect the auditor’s independence?” This study addresses these two research questions. It aims to ascertain the determinants of the level of NAS, with a focus on audit firm tenure, audit partner tenure and alumni affiliation to examine the incentives and disincentives of purchasing NAS from incumbent audit firms; and secondly, to examine whether and how the auditor independence (proxied by going concern opinion appropriateness) is affected by NAS, audit firm tenure, audit partner tenure and the existence of audit firm alumni employees.

Prior studies aimed at developing a NAS model theorize that the level of the NAS purchased from incumbent audit firms is determined by the *en ante* need for NAS, the ability of the audit firm to provide such NAS, and the client’s willingness to award NAS to the current audit firm (Houghton and Ikin, 2001; Craswell et al., 2000; Firth, 1997). This study focuses primarily on the last factor.

The study contributes to the literature in the following ways. First, it fills a gap in the existing economics of auditing literature. While there is an established literature empirically testing various audit fee models, there is little published research directly hypothesising and testing NAS models. This study captures both the costs and benefits of purchasing auditor-provided NAS. As such, it contributes to our knowledge of the nature of NAS and the NAS model. Secondly, it is the first study to investigate the role of auditor tenure in the determination of NAS. Prior research focuses on the relation between auditor tenure and audit quality. However, there are other dimensions of auditing that audit tenure may potentially influence. Thirdly, it adds to the existing literature examining alumni who benefit their former audit firm by providing empirical evidence of a specific type of benefit - higher level of NAS purchases. Lastly, by examining the joint effect of audit tenure, alumni affiliation and NAS on auditor independence, this study extends our current knowledge of possible threats to auditor independence.

2. The Role of Auditor-Client Relationships in Purchasing Auditor-Provided NAS

Appointing a supplier of NAS will give rise to considerable setup costs, which includes costs of searching for the supplier and familiarization with the business; and the risk of receiving low-quality NAS, which comes from the lack of past interaction to demonstrate the supplier's ability. These switching costs make clients less sensitive to the fluctuations in service quality (Jones et al., 2000) and increase their commitment to the incumbent service supplier (Patterson and Smith, 2003). There is evidence that relationship length leads to an increase in switching costs as perceived by clients (Tellefsen and Thomas, 2005; Goodman and Dion, 2000; Jones et al., 2000).

The auditing profession is characterised by a high turnover rate and the incidence of those former auditors taking up positions with clients is significant (Behn et al., 1999; Imhoff, 1978). As such, there are a considerable number of alumni directors whose personal network covers the key personnel of both former audit firms and current companies. This constructs a potential association between directors of client firms and audit firms. Alumni directors are found to have residual goodwill toward their alma mater (Kotler and Bloom, 1984). Once the opportunity arises, they tend to benefit their former firm in a number of different ways (Steele and Basioudis, 2000).

This shows a strong social attachment of alumni directors to their former audit firms, which makes alumni affiliation an important dimension of auditor-client relationships.

3. Hypothesis Development

3.1 Hypothesis One: Relation between Audit Firm Tenure and NAS

According to the theory of relationship marketing, an enduring association between the buyer and seller has the potential to bring benefit to both parties. From the perspective of the audit firm, the organisational auditor-client relationship is an important marketing tool for them to maintain existing service and promote cross-selling (Clark and Payne, 1994; Huntley, 2005). Furthermore, it leads to reduced costs as setup costs can be amortized over a longer customer lifetime (Clark and Payne, 1994) and the knowledge developed in the process of auditing could result in knowledge spillovers to NAS (Simunic, 1984). Therefore, audit firms are better off staying in the relationship and supply NAS to their current clients. From the auditees' perspective, the benefits are usually in the forms of value-adding solutions and reduced set-up costs. This largely influences the auditee's willingness to purchase NAS from current audit firms.

The continuity of interaction necessitates that sellers become more knowledgeable about their customers' requirements and needs, which in turn allows them to customize their services to reach the best result. As such, it is very natural that clients have more trust in getting a value-adding solution from those suppliers who have demonstrated a consistent capability and reliability through past transactions. In the auditing context, prior research has recognised that the knowledge and trust developed from lengthy audit firm tenure is critical to the audit process (Ghosh and Moon, 2005; Myers et al., 2003; Arrunada and Paz-Ares, 1997). This logic can be naturally extended to NAS. Like other tailored services, NAS requires a profound knowledge of the clients' operation before it can truly add value to their business. With the passage of time an auditor-client relationship builds up specific assets that are vital to the competence of the audit firm, and more importantly, it builds up the client's trust in the audit firm's ability to provide such NAS. The latter one directly influences the client's willingness to purchase NAS from current audit firms.

Developing a commercial relationship invokes both parties making a non-transferable investment in the relationship. These investments may be in the form of money, time, effort, or other special concessions, and therefore requires a considerable set-up cost for both parties. From the client's standpoint, the cost of appointing a new supplier for NAS involves searching for the most appropriate one, contracting the price and other conditions, getting them familiar with the business and the requirement, and providing the supplier with both material and labour supports. However, a considerable amount of these costs could be saved if the NAS is awarded to the current audit firm which has already passed the initial investment stage. In addition to the start-up costs, which are only the initial specific investment, using a new supplier gives rise to the opportunity cost of wasting the specific assets that accumulate over successive audits (Arrunada and Paz-Ares, 1997). To the extent that these specific assets can be transferred to the provision of NAS, audit firms can conduct NAS efficiently. The existence of set-up costs and knowledge spillovers provides incentives for auditees to award NAS to their current audit firms. As it takes time to pass the initial stage and build the specific assets, clients' perceptions of these costs are higher as they remain with a particular service provider for a considerable time (Jones et al., 2000).

Based on the above discussion, it is argued that lengthy audit firm tenure brings about a better knowledge sharing between audit firm and client, as well as decreased costs relative to engaging a new supplier. As such, clients have the incentive to purchase NAS directly from their incumbent auditors instead of other unknown suppliers, leading to a positive relation between audit firm tenure and the level of NAS. The first hypothesis is stated as follows:

H1a: As audit firm tenure increases, the client will purchase a higher level of NAS.

However, the benefit of awarding NAS to incumbent auditors may be offset by the cost associated with reduced auditor independence in appearance. According to agency theory, the independent auditor is among the monitoring systems which reduce the costs of principal/agent conflicts. The value of the auditing profession is based on both their actual and perceived

competence and independence. Once the auditor's independence is questioned by shareholders, the auditor's role as information intermediary will be impaired and a higher return on investment will be required by shareholders to compensate for the increased risk associated with the underlying company. Since the joint provision of auditing service and NAS has the potential to threaten the perceived auditor independence and thus the reliability of the whole monitoring mechanism, companies with higher agency cost have incentives to avoid purchasing NAS from incumbent auditors to signal the credibility of the financial information. This concern may offset the benefit side and moderate the aforementioned positive relation between audit firm tenure and NAS consumption. Based on the above reasoning, the following hypothesis is tested:

H1b: The relationship between audit firm tenure and level of NAS purchased will be moderated by the level of agency costs.

3.2 Hypothesis Two: Relation between Audit Partner Tenure and NAS

As the primary link between the audit firm and clients, the audit partner has considerable influence on the client's perceptions of the audit firm's reliability and the value of their services (Biong and Selnes, 1996, Tellefsen and Thomas, 2005). Therefore, the client's trust in the audit firm's ability to provide structural solutions may come from a confidence in the audit partner's knowledge and competence. Furthermore, their commitment to the auditor-client relationship may also be determined by the audit partner's interpersonal relationship with the client (Czepiel 1990). This type of relationship is found by Frankwick et al. (2001) to be a strong determinant of service retention rates and additional service purchase.

The feeling of familiarity, friendship, trust and social support emerges from repeated alliances between the same partners (Gulati, 1995), or with increased length of customer/service provider relationship (Parkhe, 1993; Ring and Van de Ven, 1989). The association between audit partners and their clients is no exception. Lengthy audit partner tenure suggests a better interpersonal relationship between the key personnel of both parties, which has been demonstrated in the marketing literature to be positively related to future sales. As such, they have the potential to

facilitate not only the auditing process, but also the selling of NAS. Based on this logic, it is argued that lengthy partner tenure will have a positive effect on client's NAS purchase through generating a sound interpersonal relationship between audit partners and clients. This gives rise to H2a as follows:

H2a: As auditor partner tenure increases, the client will purchase a higher level of NAS.

Similar to the discussion relating to audit firm tenure, the positive relation between NAS and the audit partner tenure may also be moderated by the agency cost associated with the client company. This is because firms with high agency costs attach more importance to perceived auditor independence, and are more cautious in purchasing NAS from the incumbent audit firm. Even though the board of directors have a good personal relationship with the partners in the current audit firm, this may not be comparable to the cost associated with the joint supply of auditing and NAS. Based on the above reasoning, the following hypotheses are tested:

H2b: The relationship between audit partner tenure and level of NAS purchased will be moderated by the level of agency costs.

3.3 Hypothesis Three: Relation between Alumni Affiliation and NAS

The relationship between an audit firm and a client's company director who is an alumnus of that firm is another type of auditor-client relationship that has received minimal attention in the auditing literature to date. It captures the residual goodwill the alumnus holds toward their alma mater and sometimes the personal relationship between the alumnus and their former colleagues.

If a director is an alumnus of the company's current audit firm, the alumnus may have residual goodwill toward their alma mater (Kotler and Bloom, 1984). This loyalty to their former employer causes alumni directors to strongly identify with their old firm (Mahon, 1978). Iyer et al. (1997) demonstrate that when alumni strongly identify with their former employer, they tend to benefit their former firm in a number of different ways, including buying audit services from the former audit firm on behalf of their current employer (Kotler and Bloom, 1984) or behaving

softly in audit fee negotiation (Steele and Basioudis, 2000). Since the board of directors usually approves the NAS suppliers, an opportunity exists for alumni directors to grant business to their former employers. As long as the residual goodwill still holds, they will award NAS to the incumbent audit firm.

Alumni directors may also have developed good personal relationships with their former colleagues through their prior affiliation with the audit firm. Marketing theory shows that this familiarity and trust give the buyer a sense of comfort and confidence because they know what they are getting (Berry, 1995). Therefore, when the alumni directors make decisions on NAS suppliers, they may naturally consider their previous firm. Furthermore, since an alumnus has a better knowledge about the range of services offered by their former firms (Mahon, 1978), it is less costly/risky for them to choose the former audit firm as the NAS provider compared to appointing an unknown supplier. The prior discussion suggests the following hypothesis:

H3a: Companies with a director who is an alumnus of the incumbent audit firm will purchase a higher level of NAS from the incumbent audit firm.

Once again, the residual goodwill held by the alumnus to their former employers may be outweighed by the cost of the impaired perception of auditor independence, leading to a reduced consumption of auditor-provided NAS for those firms with high agency costs. This hypothesis is tested as follows:

H3b: The relationship between alumni affiliation and level of NAS purchased will be moderated by the level of agency costs.

3.4 Hypothesis Four: Impact on Auditor Independence

A close relationship, developed over time at both the firm level and at the interpersonal level, is essential in the successful selling of NAS. However, there are regulatory concerns that such close relationships and potential economic dependence may have a detrimental effect on auditors' independence and their role as information intermediary in the agency relationship.

Although auditors are required to maintain their objectivity and independence, there are incentives that might induce auditors to compromise their independence. Among those distractions, economic dependence and personal relationships have received most attention. The provision of NAS creates knowledge spillovers that could lead to economic bonding (Simunic, 1984). This bond may impair both the actual and perceived auditor independence because the audit firm is unwilling to criticize the work done by its consultancy division, and the audit firm does not want to lose lucrative NAS and is, therefore, more reluctant to disagree with management's interpretations of accounting matters. In respect of the personal relationship, Mautz and Sharaf (1961, 231) state that in most instances "...the greatest threat to [auditor] independence is a slow, gradual, almost casual erosion of [their] honest disinterestedness" (Mautz and Sharaf 1961, 208). Thus it is alleged that a personal relationship, to the extent of developing bonds of loyalty or emotive relationships, will consciously or subconsciously impact the auditor's independence and objectivity.

Following an agency theory approach, the threat to auditor independence has been examined in recent literature. This includes NAS, audit firm tenure, audit partner tenure and alumni affiliation. Evidence from these studies is very mixed. Most studies fail to find that NAS or lengthy audit firm tenure leads to a reduced propensity of issuing a qualified audit report (Carcello and Nagy, 2004; Defond et al., 2002; Geiger and Raganandan, 2002; Barkess and Simnett, 1994), a higher level of discretionary accruals (Ashbaugh et al., 2003; Chung and Kallapur, 2003; Myers et al., 2003) and a higher frequency of annual report restatement (Kinney et al., 2003; Raghunandan, et al., 2003; Myers et al., 2004). However, there are other studies showing that auditors allow higher level of earnings management when they provide both auditing and non-audit services (Ferguson et al., 2004; Frankel et al., 2002) or have been with the client for a considerable time (Davis et al., 2003).

The studies examining audit partner tenure and alumni affiliation are relatively limited. Although the results from Carey and Simnett (2005) are not consistent with independence concerns, other papers argue that the misplaced personal friendship and trust will diminish auditor independence

and make them less willing to restrict the managerial discretion in reporting earnings (Fargher et al., 2005) or make them allow a less conservative accounting approach (Hamilton et al., 2005). This familiarity threat also applies to alumni affiliation as auditors might be overly friendly with their former colleagues and become unwilling to challenge their assertions. The former auditor might also be sufficiently familiar with the audit firm's testing methodology that they can circumvent its design¹. Research into alumni affiliation has been confined mainly to laboratory studies (Beasley et al., 2000; Parlin and Bartlett, 1994), it is not until recently that there is empirical evidence supporting the detrimental impact of alumni affiliation on auditor independence (Lennox, 2005; Menon and Williams, 2004).

This study adds to the extant literature on auditor independence. In addition to examining the potential effect of NAS and auditor-client relationship on auditor independence, this study will further look at the joint effect of NAS and auditor-client relationship for the following two reasons: First, if a positive relation between NAS and audit firm/partner tenure is found, one may argue that an audit firm/partner who faces an important client will have a tendency to sacrifice their independence for a longer auditor-client relationship. If that is true, it should be reflected by a negative relation between auditors' propensity to issue going-concern opinion and the interaction term (auditor tenure*NAS). Contrarily, a non-negative relationship will rule out this explanation. Secondly, if the regulatory concern about NAS and auditor-client relationship is true, the auditor independence should be the weakest in a situation where there is a lengthy relationship with an important client. The interaction term examines this effect.

As auditor independence and audit quality is hard, if not impossible, to observe, extant literature uses earnings management surrogates (Menon and Williams, 2004; Myers et al., 2003), accounting conservatism (Hamilton et al., 2005) or audit opinion issuance (Defond et al., 2002; Geiger and Raghunandan, 2002) as estimations of audit quality. Although earnings management and accounting conservatism may reflect audit quality to some extent, the auditor's influence on client's accruals is likely to be indirect. Given that the financial statements are the joint

¹ The accounting fraud in the Phar-Mor Inc. was successfully hidden because management had formerly been employed by the external auditors (Coopers and Lybrand) and so they knew what the auditors were looking for (Buckless et al., 2000).

production of both managers and auditors, the increased earnings management or reduced accounting conservatism may not be attributable to the auditor's failure to detect and report errors, especially when the accounting procedure does not violate accounting standards.

Following Defond et al. (2002) and Geiger and Raghunandan (2002), this study argues that the audit report is the final outcome of the audit process, and is the only external communication of what the auditor has done and concluded during the audit. The decision on what type of audit report to render to the client is the final cumulative audit decision, and is subject to a considerable amount of professional judgment and negotiation with the client. As such, it captures the possible influence that close audit-client relationships might have on the auditor's professional judgment and their behaviour in the negotiation. If the auditors sacrifice some of their independence when facing the clients they have been working with for a long time or the ex-colleagues from their former audit firms, this will be reflected by a reduced professional scepticism or a soft behaviour in audit conflict situation, leading to a lower propensity to issue a qualified audit opinion. In contrast, if auditor independence remains in spite of the personal relationship between auditors and clients, they should be able to unbiasedly arrive at an opinion concerning the client's financial statements.

One concern of using audit opinion as a proxy of audit quality is that a lower frequency of issuing qualified opinions does not necessarily lead to an erosion of audit quality. As auditor-client relationship develops, the auditor's ability to negotiate a settlement with a client also grows. Such an increased ability may help the two parties resolve conflicts more satisfactorily, avoiding the issuance of a qualified opinion. To address this concern, this study associates audit quality with the types of audit opinion that are less open to negotiation, specifically going concern modification. Indeed, the term audit failure typically refers to cases in which auditors fail to issue going concern opinions to clients that subsequently file for bankruptcy (Blacconiere and Defond 1997; Weil, 2001). Based on the above discussion, the following hypotheses are tested:

H4a: Higher levels of NAS will reduce the auditor's propensity to issue going concern audit opinions.

H4b: Longer audit firm tenure will reduce the auditor's propensity to issue going concern audit opinions.

H4c: Longer audit partner tenure will reduce the auditor's propensity to issue going concern audit opinions.

H4d: The existence of audit firm alumni on the client's board of directors will reduce the auditor's propensity to issue going concern audit opinions.

H4e: Where there are both higher levels of NAS purchased and a closer auditor-client relationship, it will reduce the auditor's propensity to issue going concern audit opinions.

4. Methodology

4.1 Sample

This study examines the year 2002 as it belongs to the post-Enron period and therefore is able to capture the most current characteristics of auditor-client relationship within a context of increased scrutiny. Auditor tenure and NAS fee data are collected from *Who Audits Australia* and annual reports. Consistent with prior literature (Carey and Simnett, 2005), audit firm mergers are treated as tenure continuance. Financial data comes from the Aspect Financial Database. The alumni affiliation data is hand collected from the directors' profiles of annual reports. Table 1 provides some information on the sample selection process. Where necessary raw data was transformed (logarithmic) to remove skewness and kurtosis, winsorization is conducted at 1% level.

INSERT TABLE ONE HERE

4.2 Variables

4.2.1 Dependent Variables

4.2.1.1 Level of NAS

Audit fees and NAS fees are determined by similar factors (Whisenant et al, 2003), accordingly, the dollar value of auditor provided NAS is used to proxy for the level of NAS in the fees model. Other proxies for level of NAS used in prior studies include NAS fee to audit fee ratio (Firth 1997, Parkash and Venable, 1993), NAS fees (e.g. Whisenant et al., 2003; Defond et al., 2002), and NAS to total fee ratio (e.g. Craswell, 1999). Scaled NAS measures capture the extent to which the auditor is dependent on high margin NAS, and are therefore widely used in the audit quality literature. Following these studies, we use the NAS to total fee ratio to proxy for the level of NAS in the analysis of auditor independence. Total fees generated from an auditing client is another measure of payment size which has been widely used in prior literature. Ashbaugh et al. (2003) argue that the sum of audit and non-audit fees best captures the financial importance of the client to the auditor, and best fits DeAngelo (1981)'s framework. As the non-zero auditor switching costs results in auditors' receiving economic rents from both NAS and audit services, a logical extension of the relationship selling of NAS is that nurturing a relationship with the auditing client will bring about increased revenue from that client, whether in the forms of NAS or audit services. The boundary between audit services and NAS is often blurred, therefore using total fees avoids any arbitrary classification of these services. To address these concerns, this study uses total fees as an alternative measure in the fees model.

4.2.1.2 Going Concern Opinion

This study uses the failure to issue an appropriate going concern opinion as an indicator of audit quality. Since there is a well-established body of literature that aids the prediction of a going concern situation (Defond et al. 2002; Mutchler et al., 1997), an inappropriately issued opinion can be inferred when there are departures from the model's predictions. Going concern problems are more likely to be salient among financially distressed firms. Drawing on prior studies (Defond et al., 2002; Carey and Simnett, 2005), this study defines financially distressed firms by various criteria, including net profit, operating cash flow and Zmijewski Score. The indicator variable GOING_CONCERN is equal to one if the firm receives going concern audit opinion and

zero otherwise.

4.2.2 Independent Variables of Interest

4.2.2.1 Auditor Tenure

Two levels of auditor tenure are examined in this study, namely audit firm tenure and auditor partner tenure. Both of these are collected from *Who Audits Australia* and annual reports. The first step was to identify the audit firm and engagement partner for each listed company in 2002. After that, an attempt was made to identify how long each client has remained with their current audit firm/engagement partner by tracing back to the year of the latest audit firm change/auditor partner change. As such, the variables AUTEN_FIRM and AUTEN_PARTNER indicate the number of consecutive years a client has been with their current audit firm and engagement partner respectively. Consistent with prior literature (Carey and Simnett, 2005), audit firm mergers are treated as tenure continuance. Companies with joint auditors or more than one engagement partner are treated as missing data for audit firm tenure and/or audit partner tenure, and therefore are deleted from the sample.

4.2.2.2 Alumni affiliation

Alumni affiliation is measured by a dummy variable (ALUMNI). It is set to one if at least one of the directors of a listed company is an ex-employee of the incumbent auditor. Both executive directors and non-executive directors are included, as non-executive directors, especially those sitting on the audit committee, may also play an important role in the approval of NAS and selection of NAS supplier. Therefore, the alumni affiliations generated from executive directors and non-executive directors are both influential².

4.2.2.3 Proxies for Agency Costs

² Australian Corporations Act 2001 requires companies to list the qualifications and experience of its directors in the Directors' Report section of annual reports. Often companies describe the prior positions certain directors have held, including whether they have worked for, or been partner of, a particular accounting firm. If a particular firm was mentioned by name, a director was treated as being alumnus of this firm. Because this source was not necessarily complete, a second source was consulted. The name of every director with a "CA" or similar qualification such as "FCA", "ACA" and "CPA" was checked in *Who's Who in Australia 2002* (Who's Who). Who's Who is a directory of prominent people in Australia, and provides a summary of each entrant's career history. The name of the company director's alma mater was compared with that of the company's current auditor. If they are the same accounting firm, the company is assigned a value of one under the indicator variable ALUMNI for the purposes of this study.

Prior literature commonly employs measures of ownership dispersion and leverage as proxies for increased contracting costs between owners and managers (Houghton and Ikin, 2001; Firth, 1997; Parkash and Venable, 1993). The rationale for using ownership dispersion is that it measures the degree of separation between these contracting parties. Diffused ownership provides little incentive for small individual owners to monitor management directly because limited benefits are received in comparison with the monitoring costs (Neihaus, 1989). When outside investment is concentrated, however, agency conflict is reduced because a significant investment is an incentive for direct monitoring that can supplement or substitute for the monitoring provided by the auditor. Following Craswell et al. (2000), ownership dispersion (DISPERSION) is measured by the percentage of ownership held by the company's top 20 stockholders. Leverage is used to proxy a company's proximity to debt covenant breach because high leverage and breach of debt covenants increases contracting costs between the company and debt-providers. Following Firth (1997), leverage is measured by the ratio of total debt to total assets.

4.3 Model Specification

4.3.1 NAS Fee Model

For modelling the level of NAS Fees, the study uses an ordinary least squares regression, where the dependent variable is the level of NAS fee. The experimental variables are audit firm tenure (AUTEN_FIRM), audit partner tenure (AUTEN_PARTNER) and alumni affiliation (ALUMNI). All these are facets of auditor-client relationships, and thus are added to the model individually. The study draws on prior research that models non-audit fees to identify the control variables. Specifically, Whisenant et al. (2003), Defond et al. (2002) and Houghton and Ikin (2001) are reviewed to identify variables explaining non-audit fees. Based on these sources, the following model for NAS fees is estimated.

$$\begin{aligned} \text{Ln (NAS FEE)} = & \beta_0 + \beta_1(\text{ln(ASSET)}) + \beta_2(\text{BIGN}) + \beta_3(\text{SEGS}) + \beta_4(\text{FOROPS}) + \beta_5(\text{ROA}) + \\ & \beta_6(\text{LOSS}) + \beta_7(\text{MERGER}) + \beta_8(\text{FINANCE}) + \beta_9(\text{ln(AGE)}) + \beta_{10}(\text{CFO}) + \beta_{11}(\text{DISPERSION}) + \\ & \beta_{12}(\text{LEV}) + \beta_{13}(\text{AUTEN_FIRM}) + \beta_{14}(\text{AUTEN_PARTNER}) + \beta_{16}(\text{ALUMNI}) + \varepsilon \end{aligned}$$

Where:

DEPENDENT VARIABLES:

Ln(NAS FEE) = the natural logarithm of the sum total of all non-audit fees paid to the incumbent auditor

VARIABLES OF INTEREST:

AUTEN_FIRM = the number of consecutive years that the company has retained the incumbent audit firm

AUTEN_PARTNER = the number of consecutive years that the audit partner has been engagement partner on a client company

ALUMNI = an indicator variable equal to one if at least one of the directors on board is an alumnus of the incumbent audit firm, and zero otherwise

CONTROL VARIABLES:

Ln(ASSET) = the natural logarithm of the book value of total assets at the end of the year

BIGN = an indicator variable equal to one when the auditor is a member of the BigN, and zero otherwise

SEGS = the natural logarithm of the number of segments

FOROPS = an indicator variable equal to one if the company has foreign operations, and zero otherwise

ROA = return on assets defined as earnings before interest and tax divided by total assets at year end

LOSS = an indicator variable equal to one if the company reported negative net income in either of the two previous fiscal years, and zero otherwise

MERGER = an indicator variable equal to one if the company has been engaged in an merger/acquisition activity during the current year, and zero otherwise

FINANCE = an indicator variable equal to one if the company has issued equity for cash and/or has listed on another exchange during the current year, and zero otherwise

Ln(AGE) = the natural logarithm of the number of years since the company was

	listed on the Australian Stock Exchange
CFO	= operating cash flows divided by total assets at fiscal year end
OPINION	= an indicator variable equal to one for modified audit opinion, and zero otherwise
INVREC	= inventory plus accounts receivable divided by total assets at year end
YE	= an indicator variable equal to one for non-June 30 th year-end, and zero otherwise
DISPERSION	= the proportion of ownership held by the top 20 stockholders
LEV	= total liabilities over total assets at the end of the year

H1a will be supported if the coefficient of the AUTEN_FIRM is significantly positive. After that, the full sample will be divided into high-agency-cost and low-agency-cost sub-samples based on either ownership dispersion or leverage. Specifically, three different cut-offs of agency cost are used: the median value of the variable DISPERSION, the median value of LEV, and both conditions one and two must be met. If H1b is valid, a positive relation between NAS and audit firm tenure will only exist in the low-agency-cost sub-samples and not in the high-agency-cost sub-samples. Similarly, H2a and H3a will be supported if the coefficients on AUTEN_PARTNER and ALUMNI are significantly positive. Furthermore, if these significant results are only valid in the sub-samples of low agency cost, it provides evidence in support of H2b and H3b.

4.3.2 Going Concern Opinion Prediction Model

Auditor independence hypotheses are tested by estimating the coefficients in the following logistic regression that models the auditor's probability of issuing a going concern opinion to a financially distressed client:

$$\begin{aligned} \text{GOING_CONCERN} = & \beta_0 + \beta_1(\text{RISK}) + \beta_2(\ln(\text{ASSET})) + \beta_3(\ln(\text{AGE})) + \beta_4(\text{LEV}) + \beta_5(\text{CLEV}) \\ & + \beta_6(\text{INVESTMENTS}) + \beta_7(\text{BIGN}) + \beta_8(\text{LOSS}) + \beta_9(\text{CFO}) + \beta_{10}(\text{FEERATIO}) + \\ & \beta_{11}(\text{AUTEN_FIRM}) + \beta_{12}(\text{AUTEN_PARTNER}) + \beta_{14}(\text{ALUMNI}) + \text{Interaction Terms} + \epsilon \end{aligned}$$

Where:

GOING_CONCERN	= an indicator variable equal to one for companies with going concern audit opinions, and 0 otherwise
RISK	= client financial risk as measured by adjusted Zmijewski score
AGE	= the natural logarithm of the number of years since the company was listed on the Australian Stock Exchange
CLEV	= change in LEV during the year
INVESTMENTS	= short and long term investment securities (measured as current assets less debtors and inventory) divided by total assets
FEERATIO	= ratio of non-audit fees to total fees paid to the incumbent auditor.
Interaction Terms	= the interaction terms between FEERATIO and relationship variables, namely FEERATIO*AUTEN_FIRM, FEERATIO*AUTEN_PARTNER, and FEERATIO*ALUMNI.

FEERATIO appears in the model to test H4a. If the auditor's independence is reduced when jointly producing auditing and NAS, there should be a negative coefficient on this variable of interest. Three relationship variables, namely AUTEN_FIRM, AUTEN_PARTNER and ALUMNI, are included in the model individually to test H4b, H4c and H4d. If auditor independence deteriorates with closer auditor-client relationships, a negative association should be observed between these variables and issuing a going concern opinion. Interaction variables between FEERATIO and the various relationship variables are included to capture the joint effect of NAS and auditor-client relationship on the real auditor independence.

5. Results

5.1 Descriptive Statistics

Table 2 presents descriptive statistics on the full sample for the variables used in the fee models. All continuous variables are winsorized at the 99th percentile of their values.

INSERT TABLE TWO HERE

The mean NAS fee and total fee are \$173,355 and \$358,761 respectively, which are smaller than those documented in Houghton and Ikin (2001). On average, the audit firm tenure lasts for 7 years while the audit partner duration is 3.6 years. 6.3% of observations are found to have at least one director affiliated with the current audit firm. This result is comparable to Menon and Williams (2004) who report 840 (7.2%) affiliated firms out of 11575 firm-years, and Lennox (2005) who finds that among 3923 financial distressed firms, 325 (8.2%) companies have at least one affiliated executive. The proxies for agency costs show a pattern consistent with prior studies. The rest of Table 2 shows the descriptive statistics on the control variables. Mean and median firm size, measured in total assets, are \$366 million and \$18 million, indicating a skewed distribution and justifying the use of $\ln(\text{ASSET})$ in the subsequent analysis. 62.1% of the sample firms are audited by Big N auditors, consistent with non-Big N auditors having a larger market share among ASX listed firms than is typical for firms listed on United States exchanges. 19% of the sample firms received qualified or modified audit opinions in 2002. For the financial performance variables, we find negative mean values for ROA (-0.202) and operating cash flow (-0.128), and a high proportion (68.9%) of firms experiencing loss in either of the two previous fiscal years. This is consistent with United States evidence (Givoly and Hayn, 2000) which suggests a rise in loss incidence since early 1990s. There are 23.4% and 38.2% of the total firms engaged in merger and in financing activities respectively, in the current fiscal year. The sample firms have been listed for an average 13 years; have an average of 14 subsidiaries and 50% have foreign operations; an average 21% of the total assets consist of inventory and receivables, and lastly, 16.3% of the firms have a year-end other than June 30th.

A substantial number of firms (22.2%) have zero NAS, indicating that the auditor provided no services beyond the statutory audit for these firms. There are two explanations for this subgroup: these firms have no demand for consulting, tax or other services within the NAS periphery, therefore they do not purchase any NAS from any suppliers; these firms do have a demand for NAS, however they choose not to award their business to the incumbent audit firm. As discussed

previously, this study examines how auditor-client relationships and agency costs jointly affect clients' willingness to award NAS to current audit firms. A prerequisite for this relation is that there is a demand for NAS. If the clients have no demand for NAS, it is not possible for them to appoint their current audit firms, however close the auditor-client relationships are. The absence of information about a company's total annual NAS expenditure makes it impossible to distinguish between the companies with no demand for NAS and those with no demand for auditor-provided NAS. To further examine this issue, a detailed examination of the nature of these firms is also provided in Table 2.

As per Table 2, zero-NAS firms are smaller (lower level of total assets) and less complex (a reduced proportion of inventory and receivables, and a limited number of segments and foreign operations) than NAS-purchasing firms. In respect of the financial performance, zero-NAS firms are associated with more significant losses, both currently and previously, and a more severe cash shortage in terms of operating activities. The poorer financial performance is reflected by the higher frequency of modified audit opinions in the zero-NAS sample. Further, their cash flow status limits their ability to afford NAS. As such, these companies are consistently characterized by a lower probability of having demand for NAS. Based on this analysis, firms with zero-NAS purchases removed from further analysis so that the clients' purchase decision and auditor independence can be focussed upon. This leaves 709 firms which purchase NAS from their current audit firms.

The NAS fees and total fees are both significantly positively correlated with total assets and segments, suggesting the larger and more complex a company is, the more NAS they purchase. Total assets are also highly correlated with ROA and operating cash flow. While there is also a high correlation between ROA and CFO, and a positive correlation between lnSEGS and FOROPS, the results suggest that it is appropriate to proceed with OLS regression.

5.2 NAS Model

The results from the NAS fees model used to test Hypothesis 1a (audit firm tenure), 2a (audit

partner tenure) and 3a (alumni affiliation) are reported in Table 3. The estimated models demonstrate a good fit for explaining the level of NAS, with an adjusted R^2 around 56% and the F-value significant at a 0.0001 level. The results regarding control variables are mainly consistent with the findings of prior studies. Size (lnASSET) and complexity (SEGS) are positively and significantly related to higher purchases of NAS. ROA is negatively related to lnNASFEE, suggesting that poor performing firms have additional incentives to purchase NAS. Similar to Craswell et al. (2000), a company's propensity to purchase NAS is found to be related to company age, with younger firms purchasing larger amounts of NAS than their more mature counterparts. Firms audited by BIGN auditors are found to be high consumers of auditor provided NAS. This may be due to Big N audit firms having comprehensive consulting divisions offering a full range of services.

INSERT TABLE THREE HERE

Unlike prior studies (Whisenant et al., 2003; Houghton and Ikin, 2001), there is only marginal evidence that merger activities have a direct influence on the determination of non-audit fees. More surprisingly, if a company has issued new shares, this is negatively and significantly related to the value of NAS provided by the incumbent audit firms. One might expect the reverse to be true as financing activities are likely to need expert advice. However, a close examination yields the result that this negative relation between FINANCE and LnNASFEE only exists in the firms with high agency costs. This indicates that even though firms have a higher demand for expert advice during the period of new financing, they will not necessarily purchase such services from their incumbent auditors. Since new issues are an activity under strict scrutiny and public attention, issuers, especially those with high agency costs have more incentives to signal to the capital market the credibility of their accounting reports. This concern may lead these firms to avoid awarding NAS to their incumbent audit firms. This finding reinforces our hypothesis that agency costs are an important factor underlying the choice of NAS provider.

5.3 Audit Firm Tenure

The variable of interest, AUTEN_FIRM, is positive (as predicted) and conventionally significant

for the full sample, supporting the view that audit firm tenure is influential over a client's decision to purchase NAS from their incumbent audit firm (H1a). The coefficients on AUTEN_PARTNER and ALUMNI are also positive but are insignificant at conventional levels. Therefore H2a and H3a are not supported for the full sample. Similar results are found for the total fee model.

5.4 Audit Firm Tenure and Agency Costs

Table 4 contains the results for the two sub-samples based on agency costs. Leverage and ownership dispersion are used as proxies of agency cost. As such, the subgroups of firms with lower agency costs have the following characteristics: DISPERSION higher than the median value; LEV lower than the median value; both these characteristics. Similarly, the subgroups of firms with higher agency costs have the following characteristics: DISPERSION lower than the median value; LEV higher than the median value; both characteristics.

INSERT TABLE FOUR HERE

When the sample is divided by level of agency costs, it shows that there is a significant positive relation between audit firm tenure and the level of NAS for the low agency cost sub-samples, and the corresponding value of the coefficients becomes larger. While for the sub-samples of high agency cost, the coefficients on AUTEN_FIRM are consistently smaller and insignificant. This is especially so in Group3 and Group6 of each sub-sample, where agency costs are measured by both ownership dispersion and leverage. This better captures companies with extremely low or high agency costs and thus constructs a clearer contrast. It is evident that H1a is only supported for the 159 firms with low agency costs. With increasing agency costs, the positive relation between audit firm tenure and NAS is moderated, and finally disappears in the group of 160 firms with high agency costs.

The results from the total fees model are not reported. Consistent with the NAS fee model, the full sample is split into two sub-samples by agency cost. All models exhibit respectable R²s

(around 0.70) and the main finding in the NAS fee model still holds in the total fee model. That is, there is a positive relation between audit firm tenure and total fees, if and only if, the clients are associated with low agency costs. The only exception is found in Group2 which consists of firms with relatively low leverage. This reflects the potentially competing effects of increased leverage on total fees. On the one hand high leverage is associated with high agency costs, which leads to a reduced amount of NAS purchases from incumbent audit firms. On the other hand, high leverage is a signal of high client risk which has been demonstrated by the audit fee literature to be positively related to audit fees.

In combination, the evidence from NAS fee model and total fee model provides support for both H1a and H1b. This finding indicates that auditees do have incentives to award NAS to the audit firms with which they have a long stable relationship. This may be due to the fact that lengthy audit firm tenure brings about a better knowledge sharing between audit firms and clients, which not only promotes the client's trust in their audit firm's ability to provide customized solutions, but also reduces their start-up costs for the provision of NAS. However, this comes with the condition that perceived auditor independence is not impaired. For those companies with high agency costs, the cost of reduced independence in appearance outweighs the benefit of purchasing NAS from a familiar supplier.

5.5 Audit Partner Tenure

Similar to the audit firm tenure analysis, the full sample is divided in half by using alternative dimensions of the construct agency cost. The results with regards audit partner tenure and relationship tenure remain insignificant across the sub-samples (not tabularised), suggesting that although interpersonal relationship is an important component of interorganisational relationships, by itself it is not enough to influence the clients' choice of NAS supplier. Therefore the effect of auditor tenure on NAS is only observed at the firm level.

5.6 Alumni Affiliation

As outlined in Table 5, ALUMNI is found to be a significant predictor of NAS fees for most of the low-agency-cost sub-samples and becomes insignificant for all the high-agency-cost sub-

samples. The most substantial contrast is presented in Group3 vs. Group6, with the coefficient significant for the firms with low agency cost and insignificant for the firms with high agency cost. As mentioned earlier, this group is constructed by using both dimensions of leverage and ownership dispersion, thereby better identifying those firms with high or low agency cost. As such, this provides some support for H3a and H3b. Steele and Basioudis (2000), for their sample of UK companies, found that when an alumnus occupied the key position on the board of a client company, this company will pay a relatively higher audit fee to their audit firm.

INSERT TABLE FIVE HERE

When total fees is used as the dependent variable, the above finding is not replicable. One might a priori have expected the results to be more significant in the total fee model as alumni affiliation is believed to have a positive relation with both audit fees and NAS fees. This may be because this study considers all directors on the board in the selection of alumni companies. However, the result from Steele and Basioudis (2000) shows that being only an alumni director may not be sufficient to influence the audit fees. As a major part of total fees (70%) is comprised of audit fees, it is harder to get a significant result in total fees model than in NAS model.

5.7 Results for the Auditor Independence Study

5.7.1 Descriptive Statistics

Table 6 reports the descriptive statistics for the variables in the going concern model. Two different criteria are used to identify the financially distressed firms. They are firms with either negative net profit or negative cash flow from operating activities (FD1), consistent with DeFond et al. (2002), and firms with positive Zmijewski Scores (FD2). According to Zmijewski (1984), a positive score is an indicator of greater than 50% likelihood of bankruptcy. These criteria give rise to 627 and 143 observations in the samples respectively.

INSERT TABLE SIX HERE

It is reported that 15.7% of the total firms in the full sample received a going concern opinion;

this figure increases to 22.2% and 56.6% in FD1 and FD2 respectively. The audit firm tenure variable declines slightly from 7 years in the full sample to around 6 years for the financially distressed samples, while audit partner tenure remains constant at 3.6 years throughout the sub-samples. The mean FEERATIO is 29.2% for the full sample, comparable to that reported in Carey and Simnett (2005), dropping to 21.7% in FD1 and 19.6% in FD2. FD2 has been restricted to extremely financially distressed firms, therefore their ability to afford NAS is very limited. The mean value of the Zmijewski Score is -1.974 for the full sample and this increases from FD1 to FD2. This is consistent with a poorer operating cash flow and a higher frequency of prior loss in the financially distressed samples, which reflects the sample-selection criteria. LEV increases to 0.818 in FD2, and financially distressed firms are smaller in size compared to the firms in the full sample, and less of them are audited by Big N auditors. In combination, the descriptive statistics of these variables are consistent with the distressed nature of the two sub-samples.

Pearson correlations have been calculated for the going concern model using FD1 and FD2. The Zmijewski Score is highly related to LEV, CLEV and CFO. This is predictable as Zmijewski Score is a comprehensive measure which includes leverage and current ratio in its calculation. There is also a high correlation between LEV and CLEV, and a positive relation between the size of the firms and the operating cash flow. The interaction terms, FEERATIO*AUTEN_FIRM, FEERATIO*AUTEN_PARTNER, and FEERATIO*ALUMNI are significantly correlated with AUTEN_FIRM, AUTEN_PARTNER and ALUMNI respectively. Therefore, the logistic regression will be run for the variables of auditor-client relationship and their interaction terms separately.

5.7.2 Univariate Test Results

Table 6 also classifies the variables in the going concern model by opinion type, along with t-statistics from t-tests of differences between the two groups. The comparison of mean values is conducted for the three financially distressed samples as defined previously. It is not surprising that companies receiving a going-concern opinion are consistently associated with a higher bankruptcy score (RISK), a higher leverage (LEV), a larger increase in leverage (CLEV), and a lower investment in cash and securities (INVESTMENT). They are also under greater operating

stress, as they have a higher frequency of prior-year losses (LOSS) and a poorer operating cash flow (CFO). In respect of TOTAL_ASSET, BIGN and AGE, there are no significant differences between the going-concern and non-going-concern samples.

Comparing the variables of interest in the first four rows represents univariate tests of our hypotheses. Row one, two and three indicate that there are no significant differences with regards the audit firm tenure, audit partner tenure and alumni affiliation between the two opinion types. However, firms with clean audit opinions are associated with higher NAS consumption. While this univariate result is consistent with regulators' concerns that non-audit service fees impair auditor independence it fails to control for the other factors associated with the auditor's decision to issue a going concern opinion. Thus, we rely on the multivariate tests to formally test the hypotheses.

5.7.3 Multivariate Test Results

Tables 7 and 8 presents the results of estimating the logistic going concern opinion prediction model using alternative measures of auditor-client relationships to test our hypotheses. Table 7 reports the results regarding the fee ratio. Table 8 reports the results of audit firm tenure, audit partner tenure and alumni affiliation respectively. For consistency, the logistic regressions are conducted for each of the two financially distressed samples.

INSERT TABLES SEVEN AND EIGHT HERE

In Table 7, the results indicate that the going concern model provides reasonable explanatory power (R^2 is around 25%) for FD1, however, the R^2 declines to 18% for FD2, and most of the significant results regarding control variables disappear. This may due to the fact that FD2 contains insufficient degrees of freedom and excludes 62 out of the 143 firms receiving going-concern opinion within the full sample, whereas FD1 retains 139 out of the 143 firms respectively. Given that it may be problematic to draw results from FD2, the discussion will be mainly focused on FD1.

Consistent with Defond et al. (2002), the probability of a firm to receive going concern opinion is significantly positively related to the leverage (LEV) and the bankruptcy risk score (RISK), and negatively related to the companies investment in cash and securities (INVESTMENT). However, BIGN is not significant in the predicted direction as found by Defond et al. (2002). The coefficient on FEERATIO is consistently significant at conventional level (<10%), supporting H4a.

However, FEERATIO is not significant in Table 8 when it is interacted with AUTEN_FIRM, AUTEN_PARTNER and ALUMNI respectively. An explanation for this might be that FEERATIO is highly correlated with the interaction terms³, therefore some of the significance has been picked up by the interaction terms, leaving the coefficients on FEERATIO insignificant. In combination, we find marginal evidence that the auditors' propensity to issue a going concern opinion is affected by the proportion of NAS purchased by the client. This finding parallels the findings of Wines (1994) and Frankel et al. (2002) and provides some supports to the regulatory concern that auditors may sacrifice their independence for the high margin NAS.

In Table 8, the relationship variables are introduced into the model. The results regarding the control variables are mostly comparable to those reported in Table 7. In respect of the variables of interest, Hypothesis 4b, which states that audit firm tenure is negatively associated with auditor independence (where audit independence is measured as the propensity to issue a going concern modified opinion), is not supported. This finding is consistent with most of the prior research on audit firm tenure. In addition, there is no significant result with regards the interaction term (FEERATIO*AUTEN_FIRM). Whereas a negative coefficient on FEERATIO implies that higher NAS consumption may induce the audit firms to compromise their audit independence, an insignificant coefficient on FEERATIO*AUTEN_FIRM suggests that this effect is not exacerbated by the length of the audit firm tenure. Therefore it rules out the explanation that an audit firm, facing an important NAS client, has a tendency to issue a clean audit opinion in exchange for a long-term engagement with that client.

³ The correlations between FEERATIO and FEERATIO*AUTEN_FIRM, FEERATIO*AUTEN_PARTNER and FEERATIO_ALUMNI are 0.628, 0.624, 0.229 and 0.209 respectively. All significant at 0.01 level.

However, the results on audit independence are different when we focus on the audit tenure at the partner level. It can be seen from Table 8 that the effect of AUTEN_PARTNER is significantly negative, indicating that the longer the audit partner has been with their client, the more likely they will be to issue a clean audit opinion. The contradictory findings regarding audit firm tenure and audit partner tenure indicate that the association between audit firm tenure and audit quality cannot be directly applied to a scenario of audit partner tenure. This is probably because the market based incentives for independence, particularly related to reputation and litigation costs, are more prevalent at the audit firm level. Also, some measures of quality control such as partner rotation and second partner review help the audit firm to relieve the familiarity threat. Therefore, the audit partner is more likely to compromise their independence than the audit firm as a whole. This finding supports H4c, and is consistent with Hamilton et al. (2005) who find that auditor partner rotation is associated with lower abnormal accruals, and Meuwissen et al. (2005) who show that experienced audit partners are sensitive to potential client loss.

The interaction term (FEERATIO*AUTEN_PARTNER) is not found to be significant. This finding is consistent with that reported for audit firm tenure and implies that there is no difference in audit quality between an initial engagement with a high NAS purchaser and a lengthy engagement with such a client. It seems that economic bonds and relationship bonds influence audit independence separately, with the relationship bond only effective at the audit partner level.

Table 8 presents results which are not consistent with H4d. The coefficient on ALUMNI is not significant and implies that audit firms are not more likely to issue clean audit opinions to clients having at least one alumni director. This result contradicts that found by Lennox (2005) and Menon and Williams (2004). Menon and Williams (2004) define ALUMNI as an officer or director in a company who used to be a partner of the incumbent audit firm; Lennox (2005) only screens executive directors in client companies for an alumni association with an auditor. This study considers all the directors on board and counts them as ALUMNI whatever position they hold in former audit firms. It is likely that the alumni director's former position in the audit firm is not so significant or their current responsibility is not directly related to the financial reporting so that the auditors do not reduce their professional scepticism or audit work. We do not find a

significant result for FEERATIO*ALUMNI, suggesting that auditors will not be more likely to issue clear opinion when dealing with the clients with both a high NAS consumption and the alumni director. The consistent insignificant results for the interaction terms in Table 8 show that H4e is not supported.

5.8 Sensitivity Tests

In addition to the sensitivity measures already discussed in this paper, such as testing both NAS fees and total fees to avoid any arbitrary classification of audit and NAS fees, using various methods to construct the sub-samples of high/low agency cost, and employing three different criteria to identify the financial distressed firms, the following sensitivity analyses were also conducted.

Firstly, the results may be sensitive to alternative classifications of agency costs. To address this issue, another cut-off point was selected to split the full sample into the sub-samples with high or low agency cost. That is, instead of using median DISPERSION and LEV, the mean values of these two variables are used as the cut-off points. All the regressions of the NAS fee model and total fee model were rerun for the sub-samples divided by the mean values. There is no significant difference with regards to the variables of interest. The coefficient on AUTEN_FIRM remains significant for the low agency cost groups in the NAS fee model and total fee model, except for that in the total fee model, it becomes slightly insignificant for those firms with ownership dispersion greater than mean value. Consistent with the main result, there is marginal evidence that alumni affiliation has impact on the levels of NAS purchased from incumbent audit firms. In addition, we replace the classification of high and low agency cost based on the upper and lower half of the distribution with a comparison based on the upper quartile of the distribution versus the bottom quartile of the distribution. By using this approach, the effect of agency costs on the client's decision to purchase NAS from incumbent auditors is examined in a stronger context. The main results still hold. Collectively, there are no significant differences between the main findings and the results from sensitivity tests. Therefore, the results of this study are robust to the selection of high/low agency cost samples.

6. Conclusions and Suggestions for Future Research

This study hypothesizes that clients tend to purchase a higher level of NAS from the incumbent audit firm when there is a close auditor-client relationship. However, if that client company faces high agency costs, they will avoid this joint purchase of audit and NAS to signal the independence of their auditors and the credibility of the monitoring mechanism. Three auditor-client relationships are examined here: audit firm tenure, audit partner tenure and alumni affiliation. Based on 709 observations of Australian listed companies that purchased NAS from their auditor in 2002, the results of NAS fee model and total fee model mainly confirm the theoretical framework underlying the auditee's willingness to purchase NAS from the incumbent audit firms. The auditor-client relationship, in particular audit firm tenure is found to be a contributing factor that prompts the auditees to award NAS to their current auditors, whilst high agency costs are demonstrated to be a disincentive to the joint purchase of NAS and audit service. However, audit partner tenure is not found to determine levels of NAS. This indicates that although the interpersonal relationship is an important component of the interorganisational relationship, by itself it is not sufficient to influence the client's decision to purchase NAS.

Another important personal association between audit firms and clients, alumni affiliation is also tested in this study. We find marginal evidence that alumni affiliation is positively related to NAS in the low-agency-cost sample, indicating that, as expected, alumni directors do exhibit residual goodwill toward their alma mater. When there exists the opportunity, they tend to benefit their former employers by awarding NAS to them. However, it is also clear that the prerequisite for such a decision is that the client company is facing low agency costs.

Therefore, two dimensions of the auditor-partner relationship, namely audit firm tenure and alumni affiliation are influential on the auditee's decision to award NAS to incumbent audit firms. The level of agency costs faced by client companies is also identified to be an important moderating influence which prevents the auditees from purchasing high levels of NAS from current auditors in high agency cost situations. The implication for the auditing profession is that as more attention is paid to nurturing good relationships with clients and the alumni, these relationships are expected to result in additional sales of NAS.

When examining the alumni affiliation, this study has focussed on whether or not directors are alumni of the company's auditor. A logical progression might be to examine the characteristics of those alumni who have ability to benefit their former firms, and the characteristics of those who may have the potential to reduce the auditor independence. The factors such as the alumni's hierarchy in former audit firms and their current positions in client companies may be of importance.

When examining threats to independence we find marginal evidence that the auditors' propensity to issue a going concern opinion is affected by the proportion of NAS purchased by the client. This finding parallels the findings of Wines (1994) and Frankel et al. (2002) and provides some supports to the regulatory concern that auditors may sacrifice their independence for high margin NAS.

This study has implications for practice. From the perspective of audit firms, this study directly addresses the effectiveness of their marketing strategy of investing in the relationships with clients and alumni employees. Once demonstrated, audit firms may wish to pay more attention to the strategy of relationship marketing, either through developing long-term associations with clients or via building alumni networks, as these are expected to be rewarded with higher selling of NAS. From the regulators' point of view, this study explains the incentives and disincentives of companies purchasing NAS from their auditors. As such, it has input into the current debate of NAS prohibition, and aids in the exploration of an appropriate policy of NAS. Additionally, the investigation of the joint effect of auditor-client relationship and NAS on auditor independence provides further evidence to prove or disprove current notions regarding the mandatory audit firm rotation, mandatory audit partner rotation and regulations on alumni affiliation.

Like all research, this study is subject to certain limitations. First, this study is not able to determine causality, as the data is obtained from a single point in time. Second, the ability to draw inferences from this study may be limited because the relationships identified in the year selected,

2002, may not be representative of the underlying relationship. Given the intense public attention on accounting scandals in 2002, the behaviour associated with purchase and supply of NAS may be different from that in the late 1990s when there was a significant increase in levels of NAS. Third, this study removes observations with zero NAS purchases. This is done to remove those companies with no demand for NAS, so that the analysis can be focused on the auditee's choice of NAS suppliers. The absence of accurate information about a company's total annual NAS expenditure makes it not possible to distinguish between the companies with no NAS demand and those purchasing all NAS from other suppliers.

Despite the limitations outlined above, this research contributes to our knowledge of the nature of NAS and the threats to auditor independence. In particular, our knowledge is extended in relation to the benefits and costs associated with purchasing NAS from incumbent audit firms, testing for the first time how auditor-client relationships and agency costs jointly affect the auditee's decision to purchase auditor-provided NAS. Our knowledge is also extended in the joint testing of economic bonds and relationship bonds on the audit independence, which, to date have been tested separately in prior literature.

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TABLE 1
Sample Selection

Selection Mode	Observations
Listed in Australian Stock Exchange	1238
Less: Financial institutions	-227
Foreign corporations	-34
Corporations with extreme value ⁴	-1
Missing data required for calculating the dependent and independent variables	-64
Total available data	912
Firms with NAS_FEE= 0	203
Firms with NAS_FEE>0	709
Total	912

⁴ The corporation deleted is GONDWANA RESOURCES LIMITED, which has an extreme value of CLEV (-27.2088).

Table 2: Descriptive Statistics of Variables in Fee Models

Variables		Overall sample N=912			NAS_FEE=0 Sample N=203	NAS_FEE>0 Sample N=709	Students' T
		Mean	Median	Std Dev	Mean	Mean	
Dependent Variables							
1	NAS_FEE (\$'000)	173.355	18.000	708.892	0.000	222.991	-7.448***
2	TOTAL_FEE (\$'000)	358.761	71.426	1407.136	51.815	446.653	-6.598***
Variables of Interest							
3	AUTEN_FIRM	6.855	5.000	5.487	6.522	6.951	-0.981
4	AUTEN_PARTNER	3.650	3.000	3.179	3.842	3.595	0.977
5	ALUMNI	0.063	0.000	N/A	0.034	0.071	-2.246***
Control Variables							
6	TOTAL_ASSET(\$'m)	366	17.879	2590	36.88	460	-3.834***
7	BIGN	0.621	1.000	N/A	0.562	0.638	-1.968**
8	SEGS	14.420	5.000	50.499	4.527	17.253	-8.640***
9	FOROPS	0478	0.000	N/A	0.291	0.532	-6.508***
10	ROA	-0.202	-0.049	0.582	-0.350	-0.160	-3.142***
11	LOSS	0.689	1.000	N/A	0.803	0.656	4.431***
12	MERGER	0.234	0.000	N/A	0.212	0.240	-0.829
13	FINANCE	0.382	0.000	N/A	0.458	0.360	2.498**
14	AGE	12.711	9.000	13.183	11.975	12.921	-1.022
15	CFO	-0.128	-0.030	0.459	-0.229	-0.100	-2.906***
16	OPINION	0.190	0.000	N/A	0.246	0.173	2.174
17	INVREC	0.196	0.112	0.207	0.157	0.207	-3.092
18	YE	0.157	0.000	N/A	0.138	0.162	0.838
19	DISPERSION	0.632	0.647	0.196	0.602	0.641	-2.485**
20	LEV	0.394	0.356	0.352	0.344	0.408	-1.876

Table 3
Least Squares Estimations of the Relation between NAS Fees and
Personal Relationships

$$\text{Ln (NAS FEE)} = \beta_0 + \beta_1(\text{Ln(ASSET)}) + \beta_2(\text{BIGN}) + \beta_3(\text{SEGS}) + \beta_4(\text{FOROPS}) + \beta_5(\text{ROA}) + \beta_6(\text{LOSS}) + \beta_7(\text{MERGER}) \\ + \beta_8(\text{FINANCE}) + \beta_9(\text{Ln(AGE)}) + \beta_{10}(\text{CFO}) + \beta_{11}(\text{DISPERSION}) + \beta_{12}(\text{LEV}) + \text{Variable of Interest} + \varepsilon$$

Variables	Predicted Sign	Audit Firm Tenure (n=709)	Audit Partner Tenure (n=709)	Alumni Affiliation (n=709)
Constant	?	0.625 (0.92)	0.490 (0.72)	0.503 (0.74)
Ln(ASSET)	+	0.554 (13.91)***	0.560 (13.98)***	0.561 (14.05)***
BIGN	+	0.393 (3.76)***	0.437 (4.22)***	0.394 (3.78)***
Ln(SEGS)	+	0.199 (3.10)***	0.198 (3.05)***	0.200 (3.08)***
FOROPS	+	0.087 (0.73)	0.078 (0.66)	0.074 (0.62)
ROA	-	-0.483 (-3.22)***	-0.479 (-3.26)***	-0.480 (-3.26)***
LOSS	-	-0.120 (-1.01)	-0.131 (-1.10)	-0.133 (-1.13)
MERGER	+	0.150 (1.24)	0.141 (1.17)	0.145 (1.21)
FINANCE	+	-0.212 (-2.12)**	-0.205 (-2.06)**	-0.195 (-1.95)**
Ln(AGE)	-	-0.285 (-4.58)***	-0.230 (-4.65)***	-0.214 (-4.55)***
CFO	+	-0.233 (-1.15)	-0.251 (-1.28)	-0.252 (-1.28)
DISPERSION	+	-0.028 (-0.11)	-0.033 (-0.13)	-0.046 (-0.18)
LEV	-	0.133 (0.86)	0.117 (0.76)	0.125 (0.82)
AUTEN_FIRM	+	0.020 (1.73)*		
AUTEN_PARTNER	+		0.014 (1.02)	
ALUMNI	+			0.243 (1.40)
Summary Statistics				
Adjusted R-squared		0.57	0.56	0.57
F-statistic		70.27	69.87	70.03
Prob (F-statistic)		<(0.0001)	<(0.0001)	<(0.0001)

Table 4
Least Squares Estimations of the Relation between NAS Fees and
Audit Firm Tenure by Agency Costs

$$\text{Ln}(\text{NAS FEE}) = \beta_0 + \beta_1(\text{Ln}(\text{ASSET})) + \beta_2(\text{BIGN}) + \beta_3(\text{SEGS}) + \beta_4(\text{FOROPS}) + \beta_5(\text{ROA}) + \beta_6(\text{LOSS}) +$$

$$\beta_7(\text{MERGER}) + \beta_8(\text{FINANCE}) + \beta_9(\text{Ln}(\text{AGE})) + \beta_{10}(\text{CFO}) + \beta_{11}(\text{DISPERSION}) + \beta_{12}(\text{LEV}) + \text{Variable}$$

of Interest + ϵ

Variables	Predicted Sign	Full sample N=709	Low Agency Cost Sample			High Agency Cost Sample		
			<i>Group1</i> DISPERSION >0.65 N=354	<i>Group2</i> LEV <0.395 N=354	<i>Group3</i> LEV <0.395 and Dispersion>0.654 N=159	<i>Group4</i> DISPERSION <=0.654 N=355	<i>Group5</i> LEV >=0.395 N=355	<i>Group6</i> LEV <0.395 and Dispersion>0.654 N=160
C	?	0.625 (0.92)	1.432 (1.66)	0.277 (0.26)	2.609 (1.73)*	-0.013 (-0.01)	0.686 (0.75)	0.968 (0.57)
Ln(ASSET)	+	0.554 (13.91)***	0.503 (9.53)***	0.580 (9.18)***	0.427 (4.75)***	0.599 (9.33)***	0.555 (10.29)***	0.545 (5.43)***
BIGN	+	0.393 (3.76)***	0.379 (2.57)**	0.494 (3.51)***	0.471 (2.16)**	0.398 (2.64)***	0.228 (1.43)	0.174 (0.66)
Ln(SEGS)	+	0.199 (3.10)***	0.242 (2.96)***	0.307 (3.40)***	0.412 (3.42)***	0.111 (1.08)	0.124 (1.44)	0.077 (0.47)
FOROPS	+	0.087 (0.73)	0.069 (0.42)	0.017 (0.09)	0.179 (0.67)	0.143 (0.80)	0.081 (0.51)	0.337 (1.22)
ROA	-	-0.483 (-3.22)***	-0.373 (-2.02)**	-0.704 (-2.34)**	-0.671 (-1.38)	-0.690 (2.12)**	-0.402 (-2.52)**	-0.645 (-1.31)
LOSS	-	-0.120 (-1.01)	-0.042 (-0.28)	-0.063 (-0.34)	0.037 (0.16)	-0.242 (-1.21)	-0.204 (-1.27)	-0.267 (-0.96)
MERGER	+	0.150 (1.24)	0.023 (0.13)	-0.010 (-0.06)	0.001 (0.01)	0.272 (1.75)*	0.272 (1.64)	0.354 (1.69)*
FINANCE	+	-0.212 (-2.12)**	0.022 (0.14)	-0.124 (-0.89)	0.102 (0.44)	-0.406 (-3.17)***	-0.275 (-1.85)*	-0.489 (-2.45)**
Ln(AGE)	-	-0.285 (-4.58)***	-0.396 (-4.31)***	-0.445 (-5.58)***	-0.612 (-4.80)***	-0.163 (-2.12)**	-0.089 (-0.97)	-0.004 (-0.02)
CFO	+	-0.233 (-1.15)	-0.325 (-1.29)	-0.229 (-0.52)	0.113 (0.14)	-0.027 (-0.06)	-0.196 (-0.96)	0.220 (0.38)
DISPERSION	+	-0.028 (-0.11)		-0.205 (-0.54)			0.129 (0.34)	
LEV	-	0.133 (0.86)	0.204 (0.95)			0.014 (0.06)		
AUTEN _FIRM	+	0.020 (1.73)*	0.035 (1.97)**	0.033 (2.02)**	0.050 (2.03)**	0.007 (0.49)	0.002 (0.10)	-0.006 (-0.30)
Summary Statistics								
Adjusted R-squared		0.57	0.50	0.46	0.40	0.64	0.55	0.59
F-statistic		70.27	28.30	24.49	9.02	50.98	34.98	19.15
Prob (F-statistic)		<(0.0001)	<(0.0001)	<(0.0001)	<(0.0001)	<(0.0001)	<(0.0001)	<(0.0001)

*, **, *** = Significant at the 10%, 5%, and 1% level respectively using a two tailed test

Table 5
Least Squares Estimations of the Relation between NAS Fees and
Alumni Affiliation by Agency Costs

$$\text{Ln (NAS FEE)} = \beta_0 + \beta_1(\text{Ln(ASSET)}) + \beta_2(\text{BIGN}) + \beta_3(\text{SEGS}) + \beta_4(\text{FOROPS}) + \beta_5(\text{ROA}) + \beta_6(\text{LOSS}) + \beta_7(\text{MERGER}) + \beta_8(\text{FINANCE}) + \beta_9(\text{Ln(AGE)}) + \beta_{10}(\text{CFO}) + \beta_{11}(\text{DISPERSION}) + \beta_{12}(\text{LEV}) + \beta_{13}(\text{ALUMNI}) + \varepsilon$$

Variables	Predicted Sign	Full sample N=709	Low Agency Cost Sample			High Agency Cost Sample		
			<i>Group1</i> DISPERSION >0.654 N=354	<i>Group2</i> LEV <0.395 N=354	<i>Group3</i> LEV <0.395 and Dispersion>0.654 N=159	<i>Group4</i> DISPERSION <=0.654 N=355	<i>Group5</i> LEV >=0.395 N=355	<i>Group6</i> LEV <0.395 and Dispersion>0.654 N=160
Constant	?	0.503 (0.74)	1.122 (1.31)	0.076 (0.07)	2.087 (1.36)	-0.005 (-0.00)	0.655 (0.72)	0.938 (0.55)
Ln(ASSET)	+	0.561 (14.05)***	0.519 (9.89)***	0.591 (9.36)***	0.453 (4.89)***	0.600 (9.31)***	0.556 (10.40)***	0.547 (5.45)***
BIGN	+	0.394 (3.78)***	0.362 (2.45)***	0.528 (3.90)***	0.454 (2.07)**	0.406 (2.72)***	0.201 (1.24)	0.155 (0.56)
Ln(SEGS)	+	0.200 (3.08)***	0.241 (2.90)***	0.297 (3.27)***	0.416 (3.45)***	0.111 (1.07)	0.127 (1.47)	0.076 (0.46)
FOROPS	+	0.074 (0.62)	-0.036 (-0.22)	0.028 (0.16)	0.165 (0.61)	0.144 (0.80)	-0.068 (0.43)	0.331 (1.18)
ROA	-	-0.480 (-3.26)***	-0.344 (-1.97)**	-0.726 (-2.38)**	-0.609 (1.23)	-0.698 (-2.15)**	-0.399 (-2.53)**	-0.643 (-1.30)
LOSS	-	-0.133 (-1.13)	-0.050 (-0.33)	-0.057 (-0.32)	0.085 (0.37)	-0.253 (-1.27)	-0.209 (-1.29)	-0.255 (-0.91)
MERGER	+	0.145 (1.21)	0.019 (0.11)	-0.014 (-0.08)	-0.004 (-0.02)	0.268 (1.72)*	0.278 (1.70)*	0.360 (1.73)*
FINANCE	+	-0.195 (-1.95)**	0.053 (0.34)	-0.108 (-0.77)	0.131 (0.57)	-0.401 (-3.13)***	-0.263 (-1.77)*	-0.492 (-2.42)**
Ln(AGE)	-	-0.214 (-4.55)***	-0.270 (-3.87)***	-0.343 (-5.43)***	-0.456 (-4.33)***	-0.138 (-2.24)**	-0.080 (-1.15)	-0.027 (-0.23)
CFO	+	-0.252 (-1.28)	-0.371 (-1.57)	-0.218 (-0.49)	0.015 (0.02)	-0.025 (-0.06)	-0.204 (-1.01)	0.218 (0.38)
DISPERSION	+	-0.046 (-0.18)		-0.250 (-0.65)			0.124 (0.33)	
LEV	-	0.125 (0.82)	0.197 (0.91)			0.009 (0.04)		
ALUMNI	+	0.243 (1.40)	0.444 (1.85)*	0.279 (1.11)	0.609 (1.94)*	0.035 (0.15)	0.221 (0.94)	0.085 (0.25)
Summary Statistics								
Adjusted R-squared		0.56	0.50	0.46	0.40	0.64	0.55	0.59
F-statistic		69.11	28.13	24.02	8.85	50.93	35.14	19.15
Prob (F-statistic)		<(0.0001)	<(0.0001)	<(0.0001)	<(0.0001)	<(0.0001)	<(0.0001)	<(0.0001)

*, **, ***= Significant at the 10%, 5%, and 1% level respectively using a two tailed test

Table 6
Comparison of Going Concern and Clean Opinion Samples
for Financially Distressed Firms

Variables	FD1 N=627			FD2 N=143		
	GC Group N=139	No GC Group N=448	T statistic	GC Group N=81	No GC Group N=62	T statistic
1 AUTEN_FIRM	6.309	6.141	0.344	5.901	6.387	-0.647
2 AUTEN_PARTNER	3.453	3.496	-0.149	3.654	3.565	0.184
3 ALUMNI	0.050	0.061	-0.490	0.049	0.097	-1.055
4 FEERATIO	0.217	0.285	-2.858***	0.196	0.275	-2.120**
5 RISK	2.844	-2.895	11.551***	7.072	3.578	2.875***
6 TOTAL_ASSET (\$m)	43.470	213.191	-0.616	42.274	63.033	-0.555
7 AGE	12.180	11.248	0.810	10.914	11.581	-0.360
8 LEV	0.673	0.272	8.176***	0.990	0.593	4.879***
9 CLEV	0.217	0.009	4.363***	0.404	0.210	2.681***
10 INVESTMENT	0.208	0.313	-3.963***	0.224	0.315	-1.944*
11 BIGN	0.554	0.543	0.228	0.494	0.597	-1.222
12 LOSS	0.950	0.861	3.655***	0.951	0.839	2.113**
13 CFO	-0.495	-0.172	-4.553***	-0.689	-0.459	-1.629

*, **, ***= Significant at the 10%, 5%, and 1% level respectively using a two tailed test
 FD1 = firms with both negative net profit or negative cash flow from operating activities
 FD2 = firms with positive Zmijewski Score

Table 7
Logistic Regression of Going Concern Model

$$\text{GOING_CONCERN} = \beta_0 + \beta_1(\text{RISK}) + \beta_2(\ln(\text{ASSET})) + \beta_3(\ln(\text{AGE})) + \beta_4(\text{LEV}) + \beta_5(\text{CLEV})$$

$$+ \beta_6(\text{INVESTMENTS}) + \beta_7(\text{BIGN}) + \beta_8(\text{LOSS}) + \beta_9(\text{CFO}) + \beta_{10}(\text{FEERATIO}) + \epsilon$$

Variable	Predicted Sign	FD1 (N=627)	FD2 (n=143)
Constant	?	-1.838 (-1.14)	-0.985 (-0.42)
RISK	+	0.067 (1.90)*	0.034 (0.73)
Ln(ASSET)	-	-0.089 (-0.96)	0.017 (0.12)
Ln(AGE)	-	0.129 (1.04)	-0.300 (-1.30)
LEV	+	2.381 (5.34)***	2.170 (3.4)***
CLEV	+	-0.546 (-1.21)	-1.076 (-1.29)
INVESTMENT	-	-1.705 (-3.10)***	-1.257 (-1.67)*
BIGN	+	0.203 (0.85)	-0.257 (-0.61)
LOSS	+	1.358 (3.04)***	0.852 (1.54)
CFO	-	-0.662 (-2.06)**	-0.405 (-0.95)
FEERATIO	-	-0.869 (-1.67)*	-1.691 (-1.83)*
Pseudo R ²		0.247	0.182

Table 8
Logistic Regression of Going Concern Model

Variable	Predicted Sign	FD1 (N=627)		FD2 (n=143)		FD1 (N=627)		FD2 (n=143)		FD1 (N=627)		FD2 (n=143)	
		Model1	Model 2	Model1	Model 2	Model1	Model 2	Model1	Model 2	Model1	Model 2	Model1	Model 2
Constant	?	-1.832 (-1.18)	-1.865 (-1.18)	-1.380 (-0.58)	-1.203 (-0.51)	-1.627 (-1.05)	-1.949 (-1.25)	-0.656 (-0.28)	-1.040 (-0.45)	-1.852 (-1.15)	-1.715 (-1.06)	-0.993 (-0.42)	-0.690 (-0.27)
RISK	+	0.068 (1.53)	0.067 (1.50)	0.040 (0.87)	0.036 (0.77)	0.064 (1.45)	0.069 (1.55)	0.039 (0.82)	0.038 (0.81)	0.066 (1.89)*	0.065 (1.84)*	0.033 (0.71)	0.032 (0.73)
Ln(ASSET)	-	-0.089 (-0.95)	-0.089 (-0.94)	0.031 (0.21)	0.016 (0.11)	-0.092 (-0.98)	-0.088 (-0.94)	0.004 (0.03)	0.012 (0.08)	-0.089 (-0.95)	-0.097 (-1.04)	0.019 (0.13)	0.006 (0.04)
Ln(AGE)	-	0.184 (1.24)	0.139 (0.97)	-0.122 (-0.44)	-0.227 (-0.89)	0.196 (1.51)	0.168 (1.28)	-0.242 (-0.99)	-0.271 (-1.13)	0.129 (1.04)	0.124 (1.00)	-0.300 (-1.3)	-0.332 (-1.39)
LEV	+	2.366 (4.76)***	2.379 (4.76)***	2.292 (3.60)***	2.214 (3.46)***	2.470 (4.84)***	2.429 (4.78)***	2.399 (3.46)***	2.265 (3.35)***	2.395 (5.36)***	2.450 (5.46)***	2.185 (3.49)***	2.246 (3.28)***
CLEV	+	-0.561 (-1.23)	-0.551 (-1.19)	-1.344 (-1.55)	-1.190 (-1.41)	-0.601 (-1.35)	-0.597 (-1.31)	-1.316 (-1.51)	-1.210 (-1.37)	-0.540 (-1.19)	-0.529 (-1.15)	-1.059 (-1.26)	-1.083 (-1.27)
INVESTMENT	-	-1.712 (-2.65)***	-1.706 (-2.67)***	-1.166 (-1.44)	-1.215 (-1.56)	-1.813 (-2.87)***	-1.731 (-2.73)***	-1.330 (-1.70)*	-1.214 (-1.59)	-1.706 (-3.10)***	-1.717 (-3.09)***	-1.245 (-1.64)*	-1.190 (-1.51)
BIGN	+	0.226 (0.91)	0.206 (0.84)	-0.181 (-0.43)	-0.234 (-0.56)	0.086 (0.34)	0.156 (0.63)	-0.364 (-0.83)	-0.271 (-0.64)	0.225 (0.93)	0.252 (1.05)	-0.232 (-0.55)	-0.221 (-0.54)
LOSS	+	1.337 (3.24)***	1.354 (3.28)***	0.945 (1.67)*	0.902 (1.59)	1.381 (3.32)***	1.380 (3.33)***	0.873 (1.52)	0.861 (1.53)	1.356 (3.03)***	1.331 (2.96)***	0.810 (1.45)	0.726 (1.02)
CFO	-	-0.660 (-1.72)*	-0.661 (-1.70)*	-0.438 (-1.03)	-0.408 (-0.95)	-0.700 (-1.81)*	-0.675 (-1.74)*	-0.397 (-0.89)	-0.394 (-0.91)	-0.662 (-2.06)**	-0.659 (-2.04)**	-0.408 (-0.94)	-0.375 (-0.94)
FEERATIO	-	-0.839 (-1.57)	-0.787 (-1.10)	-1.731 (-1.83)*	-0.998 (-0.82)	-0.804 (-1.52)	-0.321 (-0.50)	-1.496 (-1.60)	-1.125 (-0.91)	-0.871 (-1.67)*	-0.754 (-1.44)	-1.671 (1.81)*	-1.464 (-1.58)
AUTEN_FIRM	-	-0.018 (-0.66)		-0.067 (-1.12)				-0.102 (-1.25)					
FEERATIO *AUTEN_FIRM	-		-0.013 (-0.15)		-0.124 (-0.83)				-0.138 (-0.70)				
AUTEN_PARTNER	-					-0.090 (-2.14)**		-0.102 (-1.25)					
FEERATIO *AUTEN_PARTNER	-						-0.157 (-1.19)		-0.138 (-0.70)				
ALUMNI	-									-0.296 (-0.55)		-0.400 (-0.48)	
FEERATIO *ALUMNI	-										-5.874 (-1.54)		-5.314 (-1.24)
Pseudo R ²		0.25	0.25	0.19	0.19	0.254	0.249	0.190	0.184	0.248	0.254	0.183	0.196

