

# **Non-Audit Services and Earnings Management: Is Auditor Independence Impaired?**

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## **Abstract**

We provide additional evidence on the extent to which the purchase of non audit services (NAS) from the incumbent auditor is associated with earnings management. Using a time series of audit and non-audit fees available for Australian firms, we find that unexpected NAS (relative to audit fees) is positively associated with the absolute value of abnormal accruals. These results are robust to several different methods for estimating abnormal accruals, in contrast to tests which fail to control for expected NAS. A similar result occurs for unexpected total (i.e., NAS plus audit) fees, but not for unexpected audit fees alone. Client firms purchasing higher than expected NAS are also more likely to have larger income increasing or income decreasing abnormal accruals. However, we find no evidence of any relation between the extent of unexpected NAS, audit or total fees and the probability of client firms beating earnings benchmarks. These results therefore provide some support for concerns expressed about the potential impact of unusually high levels of NAS on auditor independence and ultimately, the quality of audited financial reports.

## ***1. Introduction***

This paper provides further evidence on the relation between the provision by auditors of non-audit services (NAS) to client firms, and the quality of audited financial data. DeAngelo (1981a) provides a simple model of audit quality, comprising two key attributes, namely the probability the auditor will detect a breach, and the probability that, having done so, the auditor will act to have this corrected. These attributes are analogous to competence and independence, respectively. Although it is apparent that independence cannot compensate for a lack of competence, auditor independence is still an important determinant of audit quality, whether “in fact” or “in appearance”. While all fees create economic bonds between the auditor and client, most debate has focused specifically on whether fees for non-audit service (NAS) result in reduced auditor independence, leading in turn to a reduction in the overall quality of the audit and ultimately, lower quality financial reporting. Although concerns about the impact of NAS on auditor independence are not new (Zeff, 2003a, b), recent regulatory intervention in the United States and elsewhere has resulted in the specific prohibition of providing many forms of NAS to audit clients.<sup>1</sup> Yet, these sweeping regulatory reforms have been made with little, if any, systematic evidence to support the claim that auditor independence is materially reduced by the provision of NAS to audit clients. Indeed, the provision of NAS may enhance audit quality by improving the auditor’s client knowledge.<sup>2</sup> Further there are legal, reputational and political incentives for auditors to maintain their independence. Hence, whether or not NAS compromises auditor independence and results in lower quality auditing and financial reporting remains an empirical question.

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<sup>1</sup> In the United States, passage of the Sarbanes-Oxley Act (2002) has specifically outlawed eight specific types of NAS. Although this is United States legislation, it also has implications for audit practice worldwide, as the restrictions on NAS apply to auditors of United States-owned subsidiaries located outside the United States. In Australia, a new professional standard (F1) has been adopted. Based on the standard issued by the International Federation of Accountants, nine specific types of NAS are outlined for which the auditor must demonstrate that independence has not been impaired.

<sup>2</sup> See Comment of Arthur Andersen LLP on the SEC proposed revision of auditor independence requirements (SEC File No. S7-13-00), September 25, 2000 ([www.sec.gov/rules/proposed/s71300/anderse1.htm](http://www.sec.gov/rules/proposed/s71300/anderse1.htm)) However if this was the case one may expect to see a negative relation between non-audit service fees and say absolute abnormal accruals.

While it is difficult to quantify the extent to which independence “in appearance” is affected, if auditor independence is reduced “in fact”, there should be evidence of a reduction in the quality of audited financial reports. This is premised on the assumption that audited financial statements are a joint product of management representations and the audit process. However, attempts at providing such evidence require measurement of the economic bond between auditors and their clients, as well as the specification of an appropriate proxy for variation in the quality of financial reports (Kinney and Libby, 2002). Although possible measures of the economic bond between auditors and their clients include the significance of the client to the auditor’s overall fee revenue, as well as the separate audit and NAS components, recent regulatory intervention appears primarily motivated by the extent of NAS relative to audit fees.

Several recent studies addressing concerns about the extent of NAS have utilized indicators of possible earnings management as a proxy for variation in the quality of financial reporting (Frankel et al. 2002; Ashbaugh et al. 2003; Chung and Kallapur 2003; Antle et al. 2003; Larker and Richardson 2003; Gore et al. 2001, Francis and Ke, 2002). This approach is consistent with survey evidence (Nelson et al. 2002) showing that auditors believe the most common method by which managers attempt to manage earnings is by manipulation of reserves, which are reflected in the accrual component of earnings. However, these studies, which typically use United States data, limited to initial fee disclosures accompanying year 2000 financial results, have yielded mixed results.<sup>3</sup> Frankel et al. find a positive relation between the extent of NAS relative to total fees paid to the auditor (RNAS) and two indicators of earnings management, namely the absolute value of abnormal accruals and the probability of client firms reporting a small earnings surprise. A third proxy for earnings management (just exceeding prior year’s earnings) fails to yield any results. Using a ranking of client importance based on fee size, Frankel et al. also find that NAS fees are positively associated with the probability of a small earnings surprise and the absolute value of abnormal accruals, but audit fees are

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<sup>3</sup> Exceptions are Gore et al. (2001) who rely solely on UK data, and Antle et al. (2002) who supplement tests of UK data with US evidence. These studies arrive at opposite conclusions about the extent of any threat to auditor independence from NAS.

negatively related to both measures, as well as to the probability of reporting a small earnings increase.

Frankel et al.'s (2002) results have been subject to extensive scrutiny. Ashbaugh et al. (2003) show that Frankel et al.'s abnormal accrual results are due to an association between income decreasing abnormal accruals and the fee ratio. They argue that income decreasing accruals are of less concern to regulators and other critics of the accounting profession than accruals which result in reported income being higher than otherwise. Using a performance adjusted measure of abnormal accruals (Kothari et al. 2004), Ashbaugh et al. find no evidence of any significant association between RNAS and the magnitude of abnormal accruals. Chung and Kallapur (2003) criticize Frankel et al.'s reliance on RNAS as a measure of the extent of the economic bond between auditors and their clients. They use measures of client significance based on client importance to the audit firm as a whole, and at the level of audit office (Francis and Reynolds 2002), and find no significant association with abnormal accruals. When tests are confined to subsets of firms expected to have relatively large incentives to engage in earnings management, Chung and Kallapur still fail to detect any evidence consistent with an association between relatively important audit (or NAS) clients and earnings management. Chung and Kallapur also show that Frankel et al.'s result for RNAS and abnormal accruals is not robust to the inclusion within the model of abnormal accruals of industry controls. Francis and Ke (2002) also take issue with Frankel et al.'s conclusions, finding no evidence of any relation between RNAS and the probability of small earnings surprises. In contrast to Frankel et al, Francis and Ke focus on quarterly earnings surprises, and confine their analysis to firms either just beating, or just failing to beat such benchmarks.

We add to this evidence by examining measures of abnormal accruals and the probability of benchmark beating behaviour for a large sample of Australian firms, where the disclosure of both audit and NAS fees has been required for many years. Our approach differs from earlier studies in that we specifically focus on unexpected NAS (and audit) fees as a proxy for the extent of any economic bond. Kinney and Libby (2002) argue that a measure of unexpected fees may better capture the profitability of the services

provided, as well as the likelihood of any inherent “bribe” by means of inflated audit and/or NAS payments. Moreover, by drawing on data for the period 1993-2000, we are able to reduce the extent to which the absence of any evidence of reduced independence may simply reflect recent attempts to address these issues. Our approach enables us to assess whether there is evidence consistent with reduced auditor independence over the period during which the pressure for regulatory intervention gradually built. It also avoids the possibility of unexpectedly large NAS attributable to “Year 2000” computing issues driving the results (or confounding them).

Using the absolute value of abnormal accruals as a proxy for possible earnings management, our results are consistent with concerns that higher levels of NAS may be associated with reduced audit quality. The extent to which NAS relative to total fees exceeds expectations is also positively related to the magnitude of both income-increasing and income-decreasing abnormal accruals. These results are robust to alternative methods of estimating abnormal accruals. Our results for unexpected fees also suggest that it is the economic bond created by large NAS, rather than audit fees, that drive this association. Although we do not find similar results when we use benchmark beating behaviour as a proxy for earnings management, this may reflect the difficulty in separating those benchmark beaters that have done so via earnings management from those that have “naturally” occurred (Dechow, Richardson and Tuna, 2003). Finally, we do not find support for the impairment of independence being driven by audit firm size.

The balance of the paper proceeds as follows. Section two describes our measures of the economic bond between auditors and their clients, as well as the approaches used to measure variation in accounting quality. Section three details our methodology. In section four we present our findings with sensitivity analysis discussed in section five. Section six concludes.

## **2. Measuring economic bonds and accounting quality**

### **2.1 The economic bond between auditors and their clients**

Examination of the extent of any relation between the supply of NAS and reduced auditor independence requires an empirical proxy for the effect of reduced independence. Consistent with recent research, as well as the focus of most recent criticisms of the auditing industry, we begin by examining the extent to which each client firm is a source of NAS relative to audit fees. This measure (RNAS) is calculated as the ratio of NAS fees to total fees. To the extent that NAS may have a higher profit margin, it may be argued that the auditor would be more concerned with avoiding the loss of audit clients to whom large amounts of NAS relative to audit fees are also sold. The RNAS measure captures this variation. While this measure does not necessarily capture total economic bonding per se there remains concern that auditors will be less independent where a larger proportion of their total fees are from the provision of NAS. The alleged higher profit margin for NAS and increased opportunities for audit firms to use audits as a platform from which they sell NAS potentially explains the increasing concern directed at the relative amount of NAS compared to audit fees (i.e., RNAS).<sup>4</sup>

However, the RNAS measure is potentially deficient in at least two respects. First, it ignores the extent to which the audit fee-NAS relation may vary according to client type. Second, to the extent that an auditor may deliver similar proportionate amounts of NAS relative to audit fees to many clients, even the complete elimination of NAS does not change the relative importance of each client. This suggests that it is the size of the fees, rather than the relative values of NAS and audit fees, that captures the strength of any economic bond between auditors and their clients. For example, Enron's audit fee was 250 percent of its expected fee based on its revenue (Kinney and Libby 2002).<sup>5</sup>

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<sup>4</sup> The SEC gave written testimony suggesting that some firms provide additional compensation to engagement partners who "cross-sell" non-audit services to audit clients. They have expressed their desire to stop this practice. See Pitt, Harvey, *Written Testimony Concerning Accounting and Investor Protection Issues Raised by Enron and Other Public Companies Before the Committee on Banking, Housing and Urban Affairs United States Senate* (March 21, 2002) ([www.sec.gov/news/testimony/032102tshlp.htm](http://www.sec.gov/news/testimony/032102tshlp.htm)).

<sup>5</sup> Another example is HIH (Australia's largest insolvency) paid its audit firm \$1.7million in audit fees but another \$1.63 million in NAS fees, up from \$757,000 the year before (Hepworth 2001). In addition to economic bonding, it also had three former auditors on its board.

Further, it has been suggested that it is the “unexpected” fees received by the audit firm that pose the greatest threats to their independence (Kinney and Libby 2002). The implication is that where an audit firm is the recipient of unusually high fees given the nature of the client firm (e.g., size and complexity), this may in fact create a greater economic bond between the client and auditor. With respect to NAS, there are established models of the demand for NAS, both in absolute terms and relative to audit fees (Parkash and Venable 1993; Barkess and Simnett 1994; Firth 1997; Frankel et al. 2002). We therefore draw on these models to estimate the expected level of NAS relative to total fees. The result is a measure of the extent to which the fee mix is unexpectedly low or high, and takes account of the expected variation in the fee mix according to client attributes. The following model is estimated as:

$$RNAS = \Sigma \alpha_1 IND_i + \beta_1 LOGTA + \beta_2 BIG5 + \beta_3 ROA + \beta_4 ANRET + \beta_5 LEV + \beta_6 MKTBK + \beta_7 SALEGRWTH + \beta_8 SPECITEM + \beta_9 MERGER + \beta_{10} EQUITY + \varepsilon \quad (1)$$

Where:

RNAS	=NAS fees divided by total fees
IND	=1 if correct industry group, and 0 otherwise <sup>6</sup>
LOGTA	=log of total assets
BIG5	=1 if the firms auditor is a Big 5 firm, and 0 otherwise
ROA	=Net income divided by total assets
ANRET	=market adjusted annual stock return
LEV	=ratio of total liabilities to total assets
MKTBK	=market-to-book ratio
SALEGRWTH	=growth rate in sales over the past year
SPECITEM	=equal to the absolute value of negative extraordinary items divided by total assets, and 0 otherwise
MERGER	=1 if the firm was engaged in an merger/acquisition activity, and 0 otherwise

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<sup>6</sup> For the purpose of this model, the original 24 ASX industries have been regrouped into 9 industries similar to the new GICS coding. Detail of this coding is provided in Appendix I.

EQUITY = 1 if the firm issued equity in the prior year and 0 otherwise  
 $\varepsilon$  = 'unexpected' RNAS

However, even when the unexpected value of RNAS is relatively high, the client may still be a relatively minor component of the audit firm's client portfolio. In this case, the extent of any quasi-rents flowing to the auditor may be sufficiently small as to make the risk to the auditor's reputation associated with allowing otherwise unacceptable accounting too large. This intuition underlies DeAngelo's (1981b) model relating audit quality with the size of the audit firm. As Chung and Kallapur (2003) note, the correlation between the extent to which RNAS is high, and the importance of the client in the overall fee portfolio may be quite low. Their approach is to estimate client significance based on the size of the audit, NAS or total fee relative to the audit firm's client portfolio. They estimate this at both the national and office level (Reynolds and Francis 2001).<sup>7</sup>

In contrast, we focus on the extent to which the client yields unexpected fees. We expect that clients yielding large unexpected audit and/or NAS fees are more likely to have higher value to the audit firm's portfolio (i.e., larger quasi-rents). Moreover, if audit partners typically only have responsibility for one or two public company audit engagements, the analysis at the partner level (as distinct from the firm or even office level) effectively reduces to examining each client firm individually. In such cases, the relative amount of NAS for that client and/or the unexpected fees from that engagement are the appropriate unit of analysis for identifying potential threats to the independence of the audit. Hence, we also estimate the models of expected audit fees and total (i.e., audit plus NAS) fees as follows:

$$LOGAUD = \alpha_1 IND_i + \beta_1 LOGTA + \beta_2 BIG5 + \beta_3 ROA + \beta_4 ANRET + \beta_5 LEV + \beta_6 MKTBK + \beta_7 INVREC + \beta_8 SPECITEM + \varepsilon \quad (2)$$

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<sup>7</sup> This is also consistent with SEC concern over audit firm partner's being compensated by their ability to cross-sell NAS to their individual client's (see footnote 4).

Where:<sup>8</sup>

LOGAUD =natural log of audit fees

INVREC =inventory plus accounts receivable as a percentage of total assets

$\varepsilon$  =‘unexpected’ audit fees

$$LOGTOT = \sum \alpha_i IND_i + \beta_1 LOGTA + \beta_2 BIG5 + \beta_3 ROA + \beta_4 ANRET + \beta_5 LEV + \beta_6 MKTBK + \beta_7 INVREC + \beta_8 SALEGRWTH + \beta_9 SPECITEM + \beta_{10} MERGER + \beta_{11} EQUITY + \varepsilon \quad (3)$$

Where:

LOGTOT =natural log of the sum of audit and non-audit fees

$\varepsilon$  =‘unexpected’ total audit fees

## 2.2 Proxies for accounting quality

Following Frankel et al. (2002), we focus on the extent to which proxies for the auditor-client economic bond are associated with reduced accounting quality, using proxies for the extent to which earnings are managed. The study incorporates two distinct approaches to identifying earnings management. We examine the magnitude of abnormal accruals (ABACC) and the probability of a firm achieving a small earnings increase. Our primary tests are the magnitude of abnormal accruals because meeting benchmark earnings targets only provides circumstantial evidence that earnings management has occurred.<sup>9</sup> Alternative approaches for identifying the impact of economic bonds, and especially NAS, on auditor independence include analysis of auditor litigation (Palmrose 1999), the extent of audit qualifications (DeFond et al. 2002) and the frequency with which prior period results are restated (Raghunandan et al. 2003; Kinney et al. 2003). Apart from proxies for accounting quality that reflect the likelihood of earnings management, other attributes of audited accounts that may be affected include conservatism (Ruddock et al. 2004) and the ability to predict future cash flows (Kelley et al. 2003). However, we are motivated by the mixed findings from prior earnings management-based research, as well

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<sup>8</sup> Often audit fee models contain data such as days lag between financial year-end and account sign off, proxy for qualification, number of subsidiaries and number foreign subsidiaries. However, the explanatory power of our models is comparable with models that do include such data.

<sup>9</sup> The presumption is that unbiased earnings, without the intervention of active earnings management, would fail to meet earnings targets, Francis and Ke (2002).

as specific claims alleging a link between NAS, reduced auditor independence, and the likelihood that earnings will be managed.<sup>10</sup>

Three separate models are used to estimate the magnitude of ABACC. Each model is estimated in cross section for each 2-digit ASX code and all variables (including the intercept) are scaled by lagged total assets. Abnormal accruals are calculated as the residuals from each model. First, an adapted version of the modified Jones model as used by Frankel et al. (2002) is estimated. This model aims to classify expected accruals more accurately and is estimated for each firm year as follows:

$$TACC = \alpha_1 + \beta_1(\Delta SALES - \Delta REC) + \beta_2 PPE + \varepsilon \quad (4)$$

Where:

TACC= Operating cash flows (item 820) less income (item 100)

$\Delta$ Sales= Change in sales (item 1) from the previous year to the current year

$\Delta$ REC= Change in accounts receivable (item 403) from the beginning to the end of the year

PPE= Year-end property, plant and equipment (item 552)

$\varepsilon$ = "JABACC"

Studies using abnormal accrual measures are often criticised due to ABACC models lacking power. Dechow et al. (2003) show that the forward looking model, which includes a sales growth measure, doubles the explanatory power of the modified Jones model. Dechow et al. argue that accruals which lead future sales are not discretionary as they carry information about a firms future prospects and such an accrual does not evolve from "opportunistic" earnings management. They also include the lagged value of total accruals (LagTACC) to capture the extent to which this year's accruals are a function of previous years accruals. The Forward-looking model is estimated as follows:

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<sup>10</sup> Arthur Levitt's speech to the NYC Centre for Law and Business "The Numbers Game" is probably the most well cited evidence of regulatory concern about the link between earnings management and audit quality.

$$TACC = \alpha_1 + \beta_1(\Delta SALES - \Delta REC) + \beta_2 PPE + \beta_3 LagTACC + \beta_4 SALEGRWTH + \varepsilon \quad (5)$$

Where:

LagTACC= Value of total accruals in year t-1

$\varepsilon$  = "FABACC"

Ashbaugh et al. (2003) contend that Frankel et al.'s (2002) results reflect their failure to adequately control for performance effects in the estimation of abnormal accruals. Using the modified Jones model they are able to replicate Frankel et al.'s results, however, when they use a performance adjusted method, the result disappears. Therefore, our third model is a performance adjusted model that is estimated as:

$$TACC = \alpha_1 + \beta_1(\Delta SALES - \Delta REC) + \beta_2 PPE + \beta_3 LagROA + \varepsilon \quad (6)$$

Where:

LagROA= Return on assets in year t-1

$\varepsilon$  = "PABACC"

Following prior research (Becker et al, 1998; Frankel et al. 2002) we initially focus on a measure of absolute abnormal accruals. This measure captures the economic effect of management's accrual decisions regardless of direction. However, as regulators are likely more concerned with income-increasing abnormal accruals reducing the quality of earnings, the signed measures are perhaps of greater interest. The following model is estimated to examine the influence of economic bonding on the magnitude of abnormal accruals:

$$ABACC = \alpha_1 + \beta_1 FEEVAR + \beta_2 BIG5 + \beta_3 CFO + \beta_4 LAGTACC + \beta_5 LOGMVE + \beta_6 LEV + \beta_7 MKTBK + \beta_8 LOSS + \beta_9 MERGER + \beta_{10} EQUITY + \varepsilon \quad (7)$$

Where:

ABACC	= alternative specifications of ABACC (1) absolute value of ABACC, (2) income-increasing ABACC and (3) income-decreasing ABACC
FEEVAR	= alternative specifications of fee variables (1) UXRNAS, (2) RNAS (3) UXAUD and (4) UXTOT
LOSS	= 1 if OI is less than 0, and 0 otherwise.

The model is similar to those estimated by Frankel et al. (2002) and Ashbaugh et al. (2003). However, due to lack of data we exclude audit firm tenure, a proxy for litigation risk and the percentage of institutional shareholders. We additionally include a dummy variable for audit firm type, as prior research has shown that Big 5 audit firms are less likely than non-Big 5 audit firms to allow their clients to manage their earnings (Becker et al, 1998; Francis et al, 1999). Following Ashbaugh et al, we use lagged total accruals to control for prior performance and cash flow from operations to control for current performance. We also separately measure MERGER and EQUITY variables that may individually be associated with greater abnormal accruals. These two variables, along with market-to-book ratio are included also to control for company growth. Finally, prior research (Becker et al. 1998; DeFond and Jiambalvo 1994) has found that firm leverage, measured as the ratio of total liabilities to total assets, is associated with the level of abnormal accruals and is therefore included in this study.

In addition to abnormal accruals, we also investigate earnings management with respect to two benchmarks, achieving a small earnings increase and avoiding a loss.<sup>11</sup> Following evidence of benchmark beating for Australian firms in Holland and Ramsay (2003) and Coulton et al. (2004), firms are classified as benchmark beaters if the increase in earnings or level of earnings is up to 2 percent of total assets.<sup>12</sup> We compare benchmark beaters against all firms who miss this target.<sup>13</sup> To test the association between NAS and firms just meeting benchmarks the following logit model is estimated:

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<sup>11</sup> Frankel et al. (2002) examine two benchmark tests, namely achieving a small increase in earnings and achieving a small earnings surprise. Limited analyst coverage for many ASX firms prevents us from analysing earnings surprises.

<sup>12</sup> We also compare firms who beat benchmarks by either 1 percent or 3 percent of total assets.

<sup>13</sup> Due to our relatively small sample size, our results comparing benchmark beaters to firms who just miss by the same margin have fairly low model fit statistics and are therefore not reported.

$$\begin{aligned}
\text{Prob}(\text{BENCHMARK}) = & \alpha_1 + \beta_1 \text{FEEVAR} + \beta_2 \text{BIG5} + \beta_3 \text{MKTBK} + \beta_4 \text{LOGMVE} + \\
& \beta_5 \text{CFO} + \beta_6 \text{LAG}(\text{ROA}) + \beta_7 \text{ANRET} + \beta_8 \text{MERGER} + \beta_9 \text{EQUITY} \\
& + \beta_{10} \text{ABACC} + u
\end{aligned}
\tag{8}$$

Where:

Prob (BENCHMARK) =alternative specifications of Prob(last yr) and Prob(zero) equal to 1 if a small earnings increase (equal to 2 percent of total assets) is reported, and 0 otherwise

FEEVAR =alternative specifications of fee variables (1) UXRNAS, (2) RNAS (3) UXAUD and (4) UXTOT

LAG(ROA) =Return on assets in year t-1

ABACC =Abnormal accrual measure (P\_ABACC, J\_ABACC, F\_ABACC)

Following Ashbaugh et al. (2003) we include an estimate of abnormal accruals in our model, as income increasing accruals are likely to be the main tool used to beat earnings benchmarks.

### ***3 Data and descriptive statistics***

The initial sample consists of Australian Stock Exchange (ASX) listed firms from 1993 through 2000 with a June 30 year-end<sup>14</sup> with both data in the Aspect Financial database and audit fee data.<sup>15</sup> A large number of observations are excluded as a result of missing prior year (i.e., lagged total assets) data used to directly measure the accrual component

<sup>14</sup> Firms without 30<sup>th</sup> June year-end were excluded because as Ball et al. (2000) show a large majority of Australian firms (78%) comply with a 30<sup>th</sup> June year end.

<sup>15</sup> Firm years ending prior to June 30, 1993 were excluded from the study due to two Australian accounting standard changes. AASB 1026, "Statement of Cash Flows" which applies to financial years ending on or after June 30, 1992, allows for a measure of operating cash flow to be obtained directly from the financial statements. AASB 1018, "Income Statement" tightened the definition of extraordinary items. The standard applies to years ending on or after December 1992 and ensures that operating profit and net profit are consistently defined across the entire sample period. AASB 1026, "Statement of Cash Flows" which applies to financial years ending on or after June 30, 1992, allows for a measure of operating cash flow to be obtained directly from the financial statements. AASB 1018, "Income Statement" tightened the definition of extraordinary items. The standard applies to years ending on or after December 1992 and ensures that operating profit and net profit are consistently defined across the entire sample period.

of earnings. Financial institutions are also excluded from the sample. To control for extreme observations we delete observations in the top and bottom 1 percent of abnormal accruals, operating income scaled by total assets and cash flow from operations scaled by total assets, leaving a final sample of 1,936 firm years possessing all necessary data. Details of the sample selection procedure are provided in Table 1.

Audit fee, non-audit fee and auditor identity are obtained from Who Audits Australia, (Craswell, 2001) maintained by the University of Sydney. Merger and acquisition data was obtained from the SDC Platinum database and share price data is obtained from the SPPR database maintained at the University of Western Australia. The results of the estimated fee models are shown in Table 2. Our results are comparable to DeFond et al. (2002) and Chung and Kallapur (2003). We report estimates of both RNAS and the dollar amount of NAS, and it is apparent that the explanatory power of audit fee models is considerably higher than for NAS. This presumably reflects the more ad-hoc nature of NAS services compared to audit fees. Re-estimating the model to exclude zero NAS firms and to include additional audit fee variables does not affect our results.<sup>16</sup>

In Table 3 we report comparisons of several characteristics of client firms after splitting observations based on the median value of RNAS. Firms with a high RNAS value have significantly greater audit, non-audit and total fees. They are also more likely to engage a Big “5” auditor, to be significantly larger in terms of total assets and market capitalisation and to have a greater cash flow. These differences highlight the need to control for client-firm specific differences that are expected to underlie variation in the expected value of RNAS, and which may also be associated with the probability of earnings management occurring. Generally, there are no differences between the levels of abnormal accruals between the two groups.

A breakdown of our fee data is provided in Table 4. Of the 1,936 firm-year observations, 64 percent (or 1,238) are audited by a Big Six audit firm. This reflects the fact that the

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<sup>16</sup> We re-estimate our model excluding those firms who do not purchase additional services from their auditor. The adjusted R<sup>2</sup> model for RNAS declines slightly to 8 percent, however, our model for natural log of NAS fees increased to 56 percent.

non-Big Six audit firms audit a greater proportion of listed firms in Australia than they do in the US. On average, audit fees remain the largest component of total fees. Approximately 10 percent of our pooled sample does not purchase any other NAS from the auditor. Between 1993 and 2000, there appears to be a slight decline in mean audit fees although the median audit fee has increased. This perhaps suggests that audit fee “squeeze” is greatest at the top-end of the market. Over the same period there has been an increase in both mean and median non-audit fees. Therefore not surprisingly RNAS has also increased over this period. Results of the auditor-partitioned samples reported in Panel B, indicate that the mean (median) audit, non-audit and total fees are significantly greater for Big Six auditees than non-big Six auditees.

## **4 Results**

### *4.1 Magnitude of abnormal accruals*

Table 5 reports test results using abnormal accruals as our proxy for accounting quality. We initially report results using the absolute value of abnormal accruals, and then supplement this with separate analysis of income increasing and decreasing abnormal accruals. As the results are generally similar regardless of whether the modified Jones, forward looking or performance adjusted model is used to estimate abnormal accruals, we only report performance adjusted results and discuss differences in our findings where appropriate. Using RNAS as our proxy for the auditor-client economic bond, we find some evidence of a positive association between RNAS and absolute abnormal accruals, although the coefficient is not significant at conventional levels (p-value .13). An exception arises in unreported tests using the forward-looking model of ABACC, where the coefficient for RNAS is positive and statistically significant (p-value, .009). Hence, our results are consistent with Frankel et al (2002) and Ashbaugh et al. (2003), in that tests of the influence of RNAS which do not adjust for the effect of performance on abnormal accruals may reject the null hypothesis of no effect, but not in tests using performance adjusted abnormal accruals.

However, when we conduct tests that first control for the expected level of RNAS (i.e., UXRNAS), our results change markedly. For performance adjusted abnormal accruals, UXRNAS is significantly positively related to the magnitude of abnormal accruals as reported in Table 5. This result also holds for both of the unreported methods of estimating abnormal accruals. The fact that the result is not sensitive to the method of estimating abnormal accruals gives strength to the conclusion that client firms with relatively high unexpected levels of RNAS tend to also have abnormal accruals of a greater magnitude.

Turning to unexpected fees, as distinct from the relative purchase of NAS, we find that higher than expected audit fees are not significantly associated with abnormal accruals. However, there is a significant positive association for higher than expected total fees. Because of the absence of any significant coefficient attaching to abnormal audit fees, and in light of the results for UXRNAS, we conclude that the results suggest that it is high NAS fees relative to audit that are the primary concern.<sup>17</sup> This is broadly consistent with criticisms directed at the accounting profession regarding the provision of extensive NAS.

As regulators and investors have typically expressed more concern over the magnitude of income increasing accruals, columns two of Table 5 reports results confined to those client firm years with positive (i.e., income increasing) abnormal accruals. Overall, the results in tests confined to income increasing abnormal accruals are similar to those for unsigned abnormal accruals. When we proxy the auditor-client economic bond with RNAS, we find no evidence of a statistically significant relation with abnormal accruals. However, when we use UXRNAS, we find that income-increasing accruals are positively related to this measure. This result is also robust to methods of estimating abnormal accruals which do not adjust for performance effects. In contrast to tests using unsigned abnormal accruals, we find no evidence that higher unexpected fees (UXTOT) are associated with income-increasing accruals.

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<sup>17</sup> We also substitute unexpected NAS fee for the fee variable and find no significant relation in any of our tests.

Although most criticism seems directed at the alleged link between reduced auditor independence and overly aggressive (i.e., income-increasing) accounting choices, we note that the reversing nature of accruals somewhat clouds the identification of overly aggressive accounting, as distinct from accounting which is conservative. Moreover, firms that attempt to smooth reported income are equally concerned with understating income in certain periods as with its overstatement in others. Hence, in the last column of Table 5 we report test results confined to firm years with income decreasing abnormal accruals. In tests confined to income decreasing abnormal accruals, we observe a statistically significant association with both RNAS and UXRNAS. Hence, it appears as though the identification of the unexpected component of RNAS is more important in identifying the effects of NAS on auditors' preparedness to allow income-increasing accruals than for income-decreasing accruals. In contrast to tests confined to income-increasing abnormal accruals, we also observe that the magnitude of income-decreasing accruals is increasing with the extent of unexpected total fees (UXTOT).

In Table 5 we also report coefficient estimates and significance levels for our control variables. In general, these are intuitive and broadly consistent with earlier evidence. For example, operating cash flow (CFO) is positively related to the absolute value of abnormal accruals, but negatively related to signed abnormal accruals. Firms that raise equity during the year tend to have larger absolute abnormal accruals, and this is driven by higher positive abnormal accruals. Finally, it is noteworthy that we find no evidence of any "Big 5" effect, suggesting that abnormal accruals are not systematically different between large and small auditors. However, that does not mean that the impact of increased economic bonds between auditors and their clients does not vary with audit firm size. We address this issue as part of our sensitivity analysis.

#### *4.2 Benchmark beating*

In Table 6 we present results of tests using two benchmarks as possible indicators of earnings management, namely just beating zero earnings and just beating the prior year's

earnings. The results fail to identify any significant association between any of our proxies for auditor-client economic bonds and either of the benchmark beating measures. Although this may support claims that economic bonds, and especially relatively high levels of NAS do not influence audit quality, an alternative explanation is that benchmark beating is not a very powerful proxy for variation in accounting quality. Dechow et al. (2003) note that the majority of benchmark beaters are unlikely to have managed earnings (i.e., they “belong” in the benchmark beating group), and Coulton et al (2004) present Australian evidence consistent with this view. Results for several of our control variables also support this view. For example, benchmark beaters are less likely to have issued equity and have higher cash flow from operations. Variables reflecting incentives to manage earnings are not typically significant in our models.

## 5 *Sensitivity analysis*

We perform several additional tests to ensure the robustness of our results discussed above. These tests are directed at the influence of observations where the client does not purchase any NAS, the consistency of our results from year to year, the impact of audit firm size, the influence of future (as distinct from contemporaneous) fees, and the use of more “complete” fee models.

Within our sample of client-firm years, there are approximately 10 percent of observations where the clients have not purchased any NAS. In order to ensure that zero NAS does not affect our result, we re-perform all our tests after discarding these observations. However, our results are virtually identical to those reported in Tables 5 and 6. Although not as strong, our results are directionally consistent when we perform tests using individual years rather than pooled data.

Unlike Ashbaugh et al. (2003), we do not find evidence consistent with Big 5 audit firms being associated with smaller abnormal accruals. However, we are primarily interested in the extent to which the incremental effect of proxies for reduced auditor independence differs between small and large audit firms. Inclusion of a Big 5 dummy in our Table 5

tests does not inform this issue. Hence, we re-perform our Table 5 tests separately for Big 5 and Non-Big 5 auditees, and in Table 7 we report results for each of our proxies for auditor-client economic bond.<sup>18</sup> For tests using the absolute value of abnormal accruals, we find that our results are primarily a reflection of reduced independence among large audit firms. However, when we confine tests to either income increasing or income decreasing abnormal accruals, our results remain directionally significant but the statistical significance is below conventionally accepted levels. There is some evidence, however, that higher NAS is associated with significantly larger income decreasing accruals for clients of non-big 6 audit firms.

We also investigate whether the effect of unexpectedly high or low fees on auditor independence is contemporaneous or lagged. Tests reported in Table 5 are re-performed, but using subsequent period fee measures. This reflects the possibility that reduced auditor independence, and hence lower quality accounting, may occur in anticipation of expected benefits, rather than contemporaneously. Overall, our results are qualitatively similar to those reported in Table 5. Results for income increasing abnormal accruals are, if anything stronger than those reported in Table 5, while the relation between income decreasing abnormal accruals and unexpected RNAS is weaker.

Finally, we also re-estimate the expected fee models reported in Table 2 with the addition of measures of subsidiaries, foreign operations and ownership structure. These variables make no discernable difference to the explanatory power of the models.

## **6. Conclusion**

This study investigates the effect of economic bonding, particularly the role of NAS, on auditor independence. We use proxies for the quality of audited financial data as an indicator of reduced auditor independence and ultimately, lower audit quality. These measures are based on an extensive literature investigating earnings management, and

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<sup>18</sup> For brevity we only report the coefficient estimate and significance for our test variables. Full model results are available from the authors. Given the absence of any significant results in our benchmark beater tests, we do not examine these results further.

measure the extent of abnormal accruals, and the probability of benchmark beating with respect to earnings levels and changes.

Overall, our results using abnormal accruals are consistent with concerns expressed about the possible effects of NAS on audit quality and ultimately, the quality of audited financial data. Using a measure of unexpected NAS relative to total fees, we find a positive association with abnormal accruals, as well as in tests confined to either income-increasing or income-decreasing abnormal accruals. In contrast, when we use a measure that fails to adjust for expected RNAS, our results are highly sensitive to the method used to estimate abnormal accruals. This sensitivity is broadly consistent with earlier studies. Although we find no evidence of any association between our economic bond proxies and the probability of benchmark beating behaviour, we view these tests as being less likely to identify instances of earnings management than those using abnormal accruals.

Our analysis is subject to many of the limitations of earlier research. Tests of reduced auditor independence are only as powerful as the measures that are used to capture the underlying constructs. Moreover, there are many potentially important attributes of audited accounting data that may be influenced by auditor independence and ultimately, audit quality. Most importantly, researchers examining attributes of audited accounting data are confined to testing the effect of independence in fact. Even if independence in fact is not affected by NAS, effects on independence in appearance may still be of considerable importance. Nevertheless, evidence consistent with concerns about reduced independence in fact gives some legitimacy to criticism of how the accounting profession has developed into broad-based professional services firms.

## References

Antle, R., E. A. Gordon, G. Narayanamoorthy, and L. Zhou. 2003. The Joint Determination of Audit Fees, Non-Audit Fees, and Abnormal Accruals. 41(4) *Journal of Accounting Research* 721-744

Arthur Andersen, Comment of Arthur Andersen LLP on the SEC proposed revision of auditor independence requirements (SEC File No. S7-13-00), September 25, 2000 ([www.sec.gov/rules/proposed/s71300/anderse1.htm](http://www.sec.gov/rules/proposed/s71300/anderse1.htm))

Ashbaugh, H., R. LaFond, and B. W. Mayhew 2003 Do Non-audit Services Compromise Independence? Further evidence 78 (3) *The Accounting Review* 611-639

Audit and Assurance Alert 13 The implications of the Sarbanes-Oxley Act 2002 (US) for Auditors and their Clients Auditing and Assurance Standards Board, September 2002

Ball, R., Kothari, S.P., and A. Robin 2000 The effect of international institutional factors on properties of accounting earnings 29 (1) *Journal of Accounting and Economics* 1-51

Barkess, L. and Simnett, R. 1994 The Provision of Other Services by Auditors: Independence and Pricing Issues 24 (4) *Accounting and Business Research* 99-108

Beck, P.J., Fecka, T.J. and Solomon, I.A. 1988 A Model of the Market for MAS and Audit Services: Knowledge Spillovers and Auditor-Auditee Bonding 7 *Journal of Accounting Literature* 65-84

Becker, C.L., M.L, DeFond, J. Jiambalvo, and K.R. Subramanyam. 1998 The Effect of Audit Quality on Earnings Management Spring *Contemporary Accounting Research* 4-24

Burgstahler, D., and I. Dichev. 1997 Earnings Management to Avoid Earnings Increases and Losses 24 (1) *Journal of Accounting and Economics* 99-126

CLERP. 2002 Corporate Law Economic Reform Program, 'Corporate Disclosure – Strengthening the Financial Framework'

Coulton, J., S. J. Taylor and S. L. Taylor. 2004 Is benchmark Beating Evidence of Earnings Management?, University of New South Wales Working paper

Craswell, A.T. 2001 *Who Audits Australia*, Accounting Foundation, University of Sydney

Chung, H., and S. Kallapur. 2003 Client Importance, Non-audit Services, and Abnormal Accruals. 78 (4) *The Accounting Review* 931-955

DeAngelo, L. 1981a. Auditor Independence, 'Low-balling', and Disclosure Regulation. 3 (2) *Journal of Accounting and Economics* 113-127.

DeAngelo, L. 1981b Auditor Size and Auditor Quality. 3 (3) *Journal of Accounting and Economics* 183-199

Dechow, P.M., S.A. Richardson, and I.A. Tuna. 2003 Why are Earnings Kinky? An Examination of the Earnings Management Explanation 8 *Review of Accounting Studies* 355-384

DeFond, M.L., and J. Jiambalvo. 1994 Debt Covenant Violation and Manipulation of Accruals. 17 (1-2) *Journal of Accounting and Economics* 145-176

DeFond, M. L., K. Raghunandan, and K. R. Subramanyam. 2002 Do Non-audit Service Fees Impair Auditor Independence? Evidence from going concern opinions. 40 (4) *Journal of Accounting Research* 1247-1274

Firth, M. A. 1997 The provision of Non-audit Services by Accounting Firms to their Audit Clients. 14 *Contemporary Accounting Research* 1-21

Francis, J. R., and B. Ke. 2002 Do Non-audit Services Compromise Auditor Independence? Working paper, University of Missouri-Columbia

Francis, J., E. Maydew, and H.C. Sparks. (1999) The Role of Big Six Auditors in the Credible Reporting of Accruals. 18 (2) *Auditing: A Journal of Practice and Theory* 17-34

Frankel, R. M., and M. F., Johnson, and K. K., Nelson. 2002 The Relation between Auditors' Fees for Non-audit Services and Earnings Management. 77, Supplement *The Accounting Review* 71-105

Gore, P., P. F., Pope, and A. K., Singh. 2001 Non-audit services, auditor independence, and earnings management. Working paper. Lancaster University

Guidance Note: Auditor Independence and Other Services. Auditing and Assurance Standards Board, December 2002

Healy, P.M., and K.G. Palepu. 2003 How the Quest for Efficiency Corroded the Market. 81(7) *Harvard Business Review* 76-85

Hepworth, A., 12 June 2001 Auditors face Conflict Crackdown. *Australian Financial Review* 1

Holland, D., and A.L. Ramsay (2003) Do Australian companies manage earnings to meet simple earnings benchmarks? 43 *Accounting and Finance* 41-62

Kelley, S.O., D.J. Shores and Y.H. Tong 2003 *Independence in Appearance Earnings Conservatism and Prediction of Future Cash Flows* (Working paper) University of Washington

Kinney W. and R. Libbey, 2002, Discussion of The Relation between Fees for Nonaudit Services and Earnings Management 77 (Supplement) *The Accounting Review* 107-114

Kinney, W., Z. Palmrose and S. Scholz, 2003, Auditor Independence, Non-Audit Services and Earnings Restatements: Is the Government Right?, University of Texas working paper

Kothari, S.P., A.J., Leone, and C.E., Wasley. 2004 Performance Matched Discretionary Accrual Measures. *Journal of Accounting and Economics* (forthcoming)

Larker, D. F., and S. A. Richardson. 2003 Corporate Governance, Fees for Non-audit Services and Accrual Choices. Working paper, University of Pennsylvania

Levitt, A. 1998 The Numbers Game. Remarks by the Chairman of the SEC at the New York University Centre for Law and Business, New York, on 28 September

Monroe, G.S. and S.T. Teh. 1993 Predicting Uncertainty Audit Qualifications in Australia using Publicly Available Information. 33 *Accounting and Finance* 79-106

Nelson, M.W., J.A. Elliot and R.L. Tarpley. 2002 Evidence from auditors about managers' and auditors' earnings-management decisions. (Supplement) *The Accounting Review* 175-202

Palmrose, Z.V. 1999 Empirical Research in Auditor Litigation: Considerations and Data. 33 *Studies in Accounting Research*, American Accounting Association, Sarasota, Florida.

Parkash, M., and C.F. Venable. 1993 Auditee Incentives for Auditor Independence: The Case of Non-Audit Services. 68 (1): *The Accounting Review* 113-133

Pitt, H., *Written Testimony Concerning Accounting and Investor Protection Issues Raised by Enron and Other Public Companies Before the Committee on Banking, Housing and Urban Affairs United States Senate* (March 21, 2002) ([www.sec.gov/news/testimony/032102tshlp.htm](http://www.sec.gov/news/testimony/032102tshlp.htm))

Professional Statement F1, Professional Independence. Code of Professional Conduct.

Raghunandan, W., Read, W.J., and J.S. Whisenant 2003 Initial Evidence on the Association between Nonaudit Fees and Restated Financial Statements 17 (3) *Accounting Horizons* 223-234

Ramsay, I. 2001 *Independence of Australian Company Auditors: Review of Current Australian Requirements and Proposals for Reform*. Commonwealth of Australia, Canberra

Ruddock, C., Taylor, S., and S. Taylor 2004 *Non-Audit Services and Earnings Conservatism: Is Auditor Independence Impaired?* Working Paper, University of New South Wales

Sarbanes-Oxley Act, 2002 Corporate Responsibility. Public Law 107-204, 107<sup>th</sup> Congress of the United States, July 2002

Securities and Exchange Commission. 2001 Final Rule: Revision of the Commission's Auditor Independence Requirements. Release Nos. 33-7919; 34-43602. SEC: Washington, DC

Zeff, S.A., 2003a How the U.S. Accounting Profession Got Where It Is Today: Part I. 17 (3) *Accounting Horizons* 189-205

Zeff, S.A., 2003b How the U.S. Accounting Profession Got Where It Is Today: Part II. 17 (4) *Accounting Horizons* 267-286

**Table 1**  
**Sample Selection**

*Panel A: Selection Procedure for Sample of Firms*

*Selection Criteria*

Observations with required audit fee data 30/6/93 to 30/6/00	4,987
Less: Financial Institutions (ASX sector 6, 16, 17, 19 and 20)	-960
	4,027
Less: Missing Accrual data	-2,012
	2,015
Less: Extreme Observations	79
<b>Sample Observations</b>	<b>1,936</b>

*Panel B: Distribution of Observations by Industry*

<i>Industry Description</i>	Sample		2000
	<i>n</i>	<i>%</i>	S&P/All Ord <sup>a</sup>
Energy	99	5.11%	3.93%
Materials	524	27.07%	17.68%
Industrials	675	34.87%	11.39%
Consumer Products	467	24.12%	22.20%
Healthcare	91	4.70%	5.89%
Financials & Property Trusts	0	0.00%	25.34%
Telecommunication Services	52	2.69%	12.38%
Infrastructure & Utilities	28	1.45%	1.18%
<b>Total</b>	<b>1,936</b>	<b>100.00</b>	<b>100.00</b>

- a The index composition is correct as of 24 August 2000. The S&P All Ordinary Index is based on the top 500 ASX listed companies and represents 99 percent of market capitalisation for the Australian market.
- b ASX sector 6 includes developers and contractors, ASX sector 16 includes banks, ASX sector 17 includes insurance firms, ASX sector 19 includes investment and financial services and ASX sector 20 includes financial trusts.

**Table 2**  
**Fee Expectation Models**

	RNAS	Log(NASFEE)	Log(AUDFEE)	Log(TOTAUD)
LOGTA	0.032	2.279	0.575	0.629
	0.000	0.000	0.000	0.000
BIG5	0.048	1.082	0.069	0.159
	0.000	0.062	0.029	0.000
ROA	-0.002	-0.229	0.052	0.019
	0.335	0.047	0.000	0.180
ANRET	-0.004	-0.317	-0.004	-0.007
	0.391	0.205	0.763	0.646
LEV	0.004	0.163	0.008	0.016
	0.026	0.129	0.148	0.017
MKTBK	0.000	-0.038	0.002	0.001
	0.455	0.244	0.295	0.486
INVREC			0.222	0.097
			0.000	0.053
SALEGRWTH	0.000	0.001		0.000
	0.917	0.885		0.562
SPECITEM	0.047	8.039	0.803	0.822
	0.605	0.099	0.003	0.006
MERGER	0.008	-0.043		0.035
	0.565	0.951		0.417
EQUITY	0.030	0.402		0.008
	0.013	0.529		0.845
<i>n</i>				
Adjusted R <sup>2</sup>	10%	13%	74%	73%
a	Industry coefficient and p-values not reported.			

**Table 3**  
**Sample Descriptive Statistics**

Variable	Below Median RNAS				Above Median RNAS				p-value	
	<i>n</i>	Mean	Median	Std. Dev	<i>n</i>	Mean	Median	Std. Dev	T Test	Z Test
PABACC	968	-0.020	-0.009	0.133	968	-0.025	-0.014	0.132	0.392	0.197
LOGAUD	968	10.819	10.756	1.173	968	11.201	11.081	1.232	0.000	0.000
LOGNAS	968	0.399	8.854	15.320	968	11.265	11.092	1.385	0.000	0.000
LOGTOT	968	10.974	10.915	1.226	968	11.971	11.844	1.288	0.000	0.000
RNAS	968	0.138	0.149	0.109	968	0.511	0.486	0.138	0.000	0.000
UXRNAS	968	-0.167	-0.169	0.114	968	0.167	0.158	0.143	0.000	0.000
BIG5	968	0.562	1.000	0.496	968	0.717	1.000	0.451	0.000	0.000
LOGTA	968	17.392	17.229	1.7499	968	18.12	17.96	1.7783	0.000	0.000
LOGMVE	968	16.993	16.706	1.869	968	17.791	17.560	1.915	0.000	0.000
OI	968	-0.012	0.041	0.167	968	-0.009	0.040	0.166	0.667	0.851
CFO	968	0.052	0.065	0.137	968	0.065	0.071	0.140	0.031	0.059
ROA	968	0.083	0.040	3.163	968	-0.019	0.037	0.228	0.315	0.803
ANRET	968	0.134	-0.056	0.963	968	0.109	-0.068	1.127	0.605	0.261
LEV	968	0.482	0.463	0.487	968	0.565	0.457	3.370	0.448	0.400
MKTBK	968	2.203	1.284	11.217	968	1.769	1.354	2.542	0.241	0.245
SPECITEM	968	0.004	0.000	0.075	968	0.001	0.000	0.011	0.261	0.133
MERGER	968	0.153	0.000	0.360	968	0.170	0.000	0.376	0.169	0.648
EQUITY	968	0.210	0.000	0.407	968	0.221	0.000	0.415	0.294	0.294

a Sample consists of 1,936 firm-year observations selected from Aspect Database over 1993-2000. Firms with a non-30 June financial year-ends and financial institutions have been deleted. Observations missing one or more variables have been eliminated. The top and bottom 1 percent of observations of (OI, CFO and PABACC) for the pooled sample have been excluded.

- b
- PABACC = absolute value of abnormal accruals estimated using the performance adjusted model
  - LOGAUD = Natural log of audit services fee paid to the auditor
  - LOGNAS = Natural log of non-audit services fee paid to the auditor
  - LOGTOT = Natural log of sum of audit fees and non-audit services fees
  - RNAS = Ratio of non-audit services fees to total audit fees
  - UXRNAS = unexpected estimate of RNAS
  - BIG5 = 1 if the firm engaged a Big 5 auditor, and 0 otherwise
  - LOGTA = Log of total assets
  - LOGMVE = Log of market value of equity
  - OI = Operating Income scaled by total assets
  - CFO = Cash flow from Operations scaled by total assets
  - ROA = Net Income divided by total assets
  - ANRET = Market adjusted annual stock return
  - LEV = Ratio of total liabilities to total assets
  - MKTBK = Market-to-book ratio
  - SPECITEM = Equal to the absolute value of negative extraordinary items divided by total assets, and 0 otherwise
  - MERGER = 1 if the firm was engaged in an merger/acquisition activity, and 0 otherwise
  - EQUITY = 1 if the firm issued equity in the prior year and 0 otherwise

**Table 4**  
**Audit Fee Descriptive Statistics**

*Panel A: Audit Fee Descriptive Statistics, By Year*

Year	n	Audit Fee			NAS Fee			Total Fee			RNAS			UXRNAS		
		Mean	Median	Std D	Mean	Median	Std D	Mean	Median	Std D	Mean	Median	Std D	Mean	Median	Std D
1993	240	\$171,770	\$53,500	\$438,032	\$118,688	\$19,250	\$315,805	\$290,458	\$74,700	\$720,609	0.290	0.278	0.219	-0.023	-0.039	0.207
1994	236	\$182,264	\$58,000	\$454,552	\$150,133	\$24,000	\$393,367	\$332,398	\$95,500	\$810,033	0.323	0.320	0.212	-0.003	-0.003	0.192
1995	260	\$178,921	\$56,900	\$487,309	\$138,079	\$29,950	\$343,773	\$316,777	\$97,200	\$786,122	0.336	0.323	0.217	0.008	-0.003	0.206
1996	302	\$163,752	\$56,500	\$437,564	\$159,589	\$30,500	\$482,698	\$323,341	\$93,900	\$868,795	0.348	0.343	0.223	0.019	0.010	0.210
1997	297	\$162,700	\$57,000	\$428,995	\$134,780	\$32,000	\$376,384	\$297,480	\$97,000	\$780,384	0.351	0.355	0.229	0.018	0.021	0.219
1998	194	\$ 53,241	\$38,800	\$ 45,390	\$27,913	\$17,500	\$35,056	\$81,154	\$59,550	\$70,272	0.280	0.268	0.209	-0.020	-0.028	0.203
1999	171	\$ 91,498	\$51,900	\$133,617	\$59,906	\$19,500	\$132,202	\$151,404	\$75,100	\$245,167	0.286	0.262	0.226	-0.030	-0.047	0.219
2000	236	\$155,984	\$70,250	\$234,022	\$202,369	\$35,500	\$537,263	\$358,353	\$105,700	\$725,444	0.353	0.331	0.242	0.009	-0.007	0.229
ALL	1,936	\$150,476	\$54,250	\$385,403	\$129,887	\$26,000	\$379,328	\$280,332	\$87,000	\$716,833	0.325	0.314	0.224	0.000	-0.008	0.211

*Panel B: Big 5 vs. Non-Big 5 Audit Fee Descriptive Statistics*

Auditor	n	Audit Fee			NAS Fee			Total Fee			RNAS			UXRNAS		
		Mean	Median	Std D	Mean	Median	Std D	Mean	Median	Std D	Mean	Median	Std D	Mean	Median	Std D
B5	1,238	\$200,022	\$71,250	\$469,523	\$184,779	\$42,100	\$462,417	\$384,755	\$119,000	\$872,218	0.357	0.355	0.228	0.000	-0.003	0.217
NB5	698	\$62,598	\$34,000	\$94,985	\$32,527	\$14,000	\$71,603	\$95,125	\$52,800	\$150,515	0.267	0.261	0.205	0.000	-0.014	0.202
T Test		.000			.000			.000			.000			1.000		
Z Test			.000			.000			.000			.000			.888	

**Table 5**  
**Magnitude of Abnormal Accruals, Pooled Sample**

	<b>Absolute PABACC</b>				<b>Increasing PABACC</b>				<b>Decreasing PABACC</b>			
Intercept	0.139	0.141	0.136	0.138	0.174	0.177	0.172	0.174	-0.093	-0.096	-0.084	-0.088
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.026	0.023	0.046	0.036
UXRNAS	0.022				0.021				-0.031			
	0.025				0.082				0.018			
RNAS		0.014				0.014				-0.025		
		0.130				0.238				0.057		
UXAUD			0.004				-0.005				-0.005	
			0.279				0.197				0.273	
UXTOT				0.006				-0.001				-0.010
				0.033				0.872				0.019
BIG5	0.004	0.003	0.004	0.004	-0.002	-0.002	-0.001	-0.001	0.000	0.001	0.000	-0.001
	0.354	0.460	0.361	0.360	0.774	0.681	0.818	0.799	0.941	0.875	0.952	0.913
CFO	0.036	0.036	0.037	0.038	-0.239	-0.239	-0.241	-0.238	-0.190	-0.190	-0.192	-0.195
	0.043	0.044	0.037	0.034	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LAGTACC	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	0.727	0.806	0.895	0.844	0.548	0.599	0.608	0.631	0.551	0.615	0.738	0.677
LOGMVE	-0.006	-0.007	-0.006	-0.006	-0.007	-0.007	-0.007	-0.007	0.005	0.006	0.005	0.005
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.002	0.009	0.006
LEV	0.000	0.000	0.000	0.000	-0.006	-0.007	-0.004	-0.006	0.000	0.000	0.000	0.000
	0.726	0.674	0.728	0.731	0.405	0.384	0.573	0.430	0.848	0.763	0.871	0.900
MKTBK	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-0.007	-0.007	-0.006	-0.006
	0.243	0.223	0.247	0.241	0.956	0.996	0.941	0.960	0.000	0.000	0.000	0.000
LOSS	0.059	0.059	0.059	0.059	-0.055	-0.054	-0.055	-0.054	-0.114	-0.114	-0.115	-0.114
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
MERGER	-0.003	-0.003	-0.003	-0.003	-0.002	-0.002	-0.002	-0.002	0.001	0.001	0.001	0.002
	0.547	0.536	0.539	0.546	0.768	0.747	0.722	0.741	0.881	0.873	0.864	0.828
EQUITY	0.034	0.033	0.034	0.034	0.033	0.033	0.033	0.033	-0.027	-0.026	-0.027	-0.027
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<i>n</i>	1, 936	1,936	1,936	1,936	842	842	842	842	1,094	1,094	1,094	1,094

Adjusted R <sup>2</sup>	19%	19%	18%	19%	23%	23%	23%	23%	32%	31%	31%	32%
a	Sample consists of 1,936 firm-year observations selected from Aspect Database over 1993-2000. Firms with a non-30 June financial year-ends and financial institutions have been deleted. Observations missing one of more variables have been eliminated. The top and bottom 1 percent of observations of (OI, CFO and ABACC) for the pooled sample have been excluded.											
b	UXRNAS = unexpected estimate from model of RNAS RNAS = Ratio of non-audit services fees to total audit fees UXAUD = Unexpected estimate from model of LOGAUD UXTOT = Unexpected estimate from model of LOGTOT BIG5 = 1 if the firm engaged a Big 5 auditor, and 0 otherwise CFO = Cash flow from Operations scaled by total assets LAGTACC = Value of total accruals in the prior year LOGMVE = Log of market value of equity LEV = Ratio of total liabilities to total assets MKTBK = Market-to-book ratio LOSS = 1 if OI is less than 0, and 0 otherwise MERGER = 1 if the firm was engaged in an merger/acquisition activity, and 0 otherwise EQUITY = 1 if the firm issued equity in the prior year and 0 otherwise											

**Table 6**  
**Benchmark Tests, Pooled Sample**

	<b>Zero Earnings</b>				<b>Earnings Change</b>			
Intercept	-4.078	-4.091	-4.075	-4.051	-3.341	-3.410	-3.383	-3.396
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
UXRNAS	-0.303				-0.008			
	0.573				0.218			
RNAS		-0.084				-0.297		
		0.874				0.362		
UXAUD			-0.053				-0.011	
			0.786				0.921	
UXTOT				-0.134				-0.026
				0.423				0.793
BIG5	-0.026	-0.021	-0.029	-0.033	-0.376	-0.355	-0.377	-0.376
	0.918	0.935	0.909	0.896	0.012	0.020	0.012	0.012
MKTBK	-0.002	-0.002	-0.002	-0.003	-0.011	-0.011	-0.011	-0.011
	0.914	0.924	0.917	0.885	0.552	0.567	0.573	0.571
LOGMVE	0.173	0.175	0.173	0.172	0.159	0.167	0.161	0.162
	0.010	0.011	0.010	0.011	0.000	0.000	0.000	0.000
CFO	14.448	14.422	14.370	14.367	6.602	6.587	6.585	6.571
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LAGROA	0.158	0.154	0.158	0.168	-0.694	-0.682	-0.691	-0.691
	0.521	0.530	0.524	0.507	0.048	0.052	0.049	0.049
ANRET	-0.456	-0.464	-0.464	-0.452	0.461	0.459	0.471	0.470
	0.040	0.037	0.037	0.042	0.000	0.000	0.000	0.000
MERGER	-0.557	-0.558	-0.550	-0.539	0.080	0.076	0.084	0.084
	0.093	0.093	0.099	0.105	0.660	0.678	0.645	0.647
EQUITY	-1.101	-1.101	-1.109	-1.109	-0.470	-0.458	-0.472	-0.472
	0.001	0.001	0.001	0.001	0.016	0.018	0.015	0.015
PABACC	15.007	14.994	14.942	14.895	6.280	6.291	6.308	6.291
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<i>Benchmark</i>								
<i>beaters</i>	135	135	135	135	415	415	415	415
<i>Pseudo R<sup>2</sup></i>	33%	33%	33%	33%	16%	16%	16%	16%

a Sample consists of 1,936 firm-year observations selected from Aspect Database over 1993-2000. Firms with a non-30 June financial year-ends and financial institutions have been deleted. Observations missing one of more variables have been eliminated. The top and bottom 1 percent of observations of (OI, CFO and ABACC) for the pooled sample have been excluded. To be classified as a benchmark beater the level or change in earnings had to fall between 0 and 0.02 of total assets. We compare benchmark beaters to all firms who miss the target.

- b UXRNAS = unexpected estimate from model of RNAS  
RNAS = Ratio of non-audit services fees to total audit fees  
UXAUD = Unexpected estimate from model of LOGAUD  
UXTOT = Unexpected estimate from model of LOGTOT  
BIG5 = 1 if the firm engaged a Big 5 auditor, and 0 otherwise  
MKTBK = Market-to-book ratio  
LOGMVE = Log of market value of equity  
CFO = Cash flow from Operations scaled by total assets  
LAGROA = Return on assets in prior year  
ANRET = Market adjusted annual stock return  
MERGER = 1 if the firm was engaged in an merger/acquisition activity, and 0 otherwise  
EQUITY = 1 if the firm issued equity in the prior year and 0 otherwise  
PABACC = Abnormal accruals estimated using the performance adjusted total accruals model

**Table 7**  
**Magnitude of Abnormal Accruals Partitioned by Auditor Type**

<i>Panel A: Absolute Abnormal Accruals</i>								
	Big Six				Non-Big Six			
UXRNAS	0.018				0.028			
	0.098				0.132			
RNAS		0.014				0.016		
		0.218				0.394		
UXAUD			0.004				0.001	
			0.327				0.819	
UXTOT				0.006				0.004
				0.068				0.428
<i>n</i>	1,238	1,238	1,238	1,238	698	698	698	698
Adjusted R <sup>2</sup>	22%	22%	22%	22%	17%	16%	16%	16%
<i>Panel B: Income Increasing Abnormal Accruals</i>								
	Big Six				Non-Big Six			
UXRNAS	0.019				0.021			
	0.146				0.352			
RNAS		0.016				0.008		
		0.233				0.734		
UXAUD			-0.006				-0.006	
			0.212				0.374	
UXTOT				-0.001				-0.002
				0.755				0.772
<i>n</i>	527	527	527	527	315	315	315	315
Adjusted R <sup>2</sup>	30%	30%	30%	30%	19%	19%	19%	19%
<i>Panel C: Income Decreasing Abnormal Accruals</i>								
	Big Six				Non-Big Six			
UXRNAS	-0.023				-0.056			
	0.131				0.032			
RNAS		-0.018				-0.046		
		0.241				0.076		
UXAUD			-0.005				-0.004	
			0.357				0.706	
UXTOT				-0.009				-0.011
				0.059				0.209
<i>n</i>	711	711	711	711	383	383	383	383
Adjusted R <sup>2</sup>	34%	34%	34%	34%	30%	29%	29%	29%

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**Appendix I**  
**Mapping of ASX Sectors to GICS Sectors**

<i>GICS Sectors</i>	<i>ASX Industry Sectors</i>
1 Materials	1 Gold 2 Other Metals 3 Diversified Resources 7 Building Materials 10 Chemicals 12 Paper and Packaging
2 Energy	4 Energy
3 Infrastructure and Utilities	5 Infrastructure and Utilities
4 Consumer Staples	8 Alcohol and Tobacco 9 Food and Household 13 Retail 15 Media 24 Tourism
5 Industrials	11 Engineering 14 Transport 22 Miscellaneous Industrials 23 Diversified Industrials
6 Financial Services <sup>19</sup>	6 Developers and Contractors 16 Banks 17 Insurance 19 Investment and Fin. Services 20 Property
7 Telecommunications	18 Telecommunications
8 Health Care	21 Health and Biotechnology

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<sup>19</sup> All financial services firms are removed from our study