An Empirical Investigation of the Audit Report Lag:

The Effect of Non-Audit Services

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Abstract
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Key words: Auditing; auditor independence; non-audit services; audit report lag; knowledge spillovers.

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1.0 Introduction

This paper investigates the effects of auditors providing non-audit services (hereafter NAS) to audit clients. It is widely believed that the provision of NAS may have a detrimental effect on the independence of auditors, causing an economic bond between auditor and client that allows the client to pressure the auditor into allowing earnings manipulations. However, empirical evidence generally suggests that the provision of NAS does not threaten auditor independence (e.g., DeFond et al. 2002; Ashbaugh et al. 2003; Chung and Kallapur, 2003). There is also a view that the provision of NAS allows the auditor to gain extra knowledge that helps to provide a more efficient audit. This knowledge spillover effect has been strongly supported by the accounting profession, as shown by Steven Wallman, former Commissioner of the SEC (1996, p. 92), who stated that in his personal opinion prohibiting auditors from providing non-audit services "denies the benefits to the audit function of learning more about the audit client and its business". This statement shows that at least some of the members of the accounting profession believe that the provision of NAS allows auditors to gain knowledge that will be beneficial to the audit. This paper seeks to provide empirical evidence about the existence of knowledge spillovers by examining the association between NAS and the audit report lag (hereafter ARL).

We expect that if knowledge spillovers do exist, firms who purchase more NAS from their incumbent auditors will benefit from a more efficient audit in the form of a shorter ARL. Although much research has been undertaken to identify determinants of the ARL (see section 2), only a small number of studies have investigated the effect of NAS on the lag (Knechel and Payne, 2001; Knechel and

Sharma, 2008). These studies were undertaken in the U.S. where concerns regarding impaired auditor independence resulted in legislation banning most NAS (the Sarbanes-Oxley Act (SOX) of 2002). Although SOX does not directly apply to most companies in New Zealand, the scandals that led to this legislation being passed have also resulted in non-audit services becoming controversial and the subject of public attention. According to Knechel and Sharma (2008), the beneficial effects of knowledge spillovers dissipated after SOX came into effect. The motivation of our paper is to examine the effect of NAS on the ARL in the post-SOX period in New Zealand. Our data thus has the advantage of being drawn from this more recent period, but in a setting where auditors are still permitted to provide NAS to audit clients. We are also able to examine a more recent period than the previous studies, and we further extend previous testing to investigate the effect of non-audit services in periods later than the period in which the service is provided. The results of this study will provide evidence as to whether NAS have a beneficial effect on the audit, rather than a detrimental effect as SOX suggests.

We test the hypothesis that the provision of NAS is not related to ARL using 260 firm-year observations from New Zealand public companies for the period 2004-2005. We find that after controlling for other determinants of the ARL there is no evidence of a significant association between NAS and the ARL in the same year in which the services are provided, but there is some evidence that NAS is associated with a shorter lag in the subsequent year. In further testing we find these reported results are robust to the removal of certain control variables, to remedial measures taken due to possible heteroscedasticity and alternative measures of the dependent and explanatory variables. The next section of this paper reviews the prior literature on the ARL and discusses the contribution of our paper.

2.0 Prior Literature

As discussed above, two opposing views have emerged in relation to the supply of NAS by external auditors to their clients, the impaired independence view and the knowledge spillover view. Although much research has been carried out in relation to impaired independence (DeFond et al., 2002; Frankel et al., 2002; Krishnan et al., 2005; Hay et al., 2006a), the research on knowledge spillovers is relatively limited. Simunic (1984) and Palmrose (1986) use the relation between audit fees and NAS fees to investigate the existence of a beneficial knowledge spillover between these services. Both studies find evidence of a positive relationship between NAS and audit fees, which is interpreted as support for the existence of knowledge spillovers. We extend this research on knowledge spillovers by examining its effect on the ARL.

Existing research on the ARL has been conducted in a number of geographical settings including Australia (Dyer and McHugh, 1975; Davis and Whittred, 1980; Whittred, 1980), New Zealand (Courtis, 1976; Gilling, 1977; Carslaw and Kaplan, 1991), Canada (Ashton et al., 1989; Ashton and Newton, 1989), the US (Ashton et al., 1987; Bamber et al., 1993; Schwartz and Soo, 1996; Knechel and Payne, 2001; Knechel and Sharma, 2008; Mitra and Hossain, 2007) and Hong Kong (Ng and Tai, 1994; Jaggi and Tsui, 1999). The most common variables investigated are client size, industry, year-end, reporting a loss, presence of an extraordinary item, client complexity, auditor size and type of audit opinion issued. Client size has been found to be negatively associated with the ARL indicating that larger public companies have a shorter ARL. Longer ARLs are predominantly associated with firms reporting an extraordinary item, firms reporting a loss and measures for complexity. Prior research appears to be inconsistent with regard to the effect of industry, year-end, ownership

characteristics and auditor characteristics. Some research finds that longer ARLs are associated with firms operating in the financial services industry, firms with weaker financial condition, year-ends that fall in the auditors' busy period and firms receiving a non-standard unqualified audit report. Meanwhile a few studies find that shorter ARLs are related to firms with overseas ownership, owner-controlled companies and companies with more concentrated ownership, as well as firms who employ a Big8/6/4 audit firm. However these results were not consistent across studies.

More recent literature on the ARL has investigated the effect of NAS on the ARL. Knechel and Payne (2001) obtained data from an international public accounting firm and looked at the effect of three previously unexamined audit firm factors: incremental audit effort, resource allocation of audit team effort and the provision of NAS, using data from 1991. They found that incremental audit effort, taxation services and the use of less experienced audit staff were positively associated with the ARL, while management advisory services were negatively related. Knechel and Payne (2001) suggest that this is due to management advisory services having a synergistic relationship with the ARL, while tax services represent added complexity, which increased ARL. Thus the study indicates that the provision of tax services increases the ARL while the provision of management advisory services decreases the ARL.

Knechel and Sharma (2008) find a negative association between the ARL and NAS in a sample of U.S. firms across the fiscal years 2000 to 2002, suggesting that knowledge spillovers occurring from the provision of NAS make the audit more efficient. However, Knechel and Sharma (2008) find no relationship in 2003, in the post-SOX period, indicating that following the ban on certain NAS the extent of knowledge spillovers disappeared. Furthermore Knechel and Sharma (2008) find that

this negative relationship is robust to alternative fee measures, providing further support for these results. Knechel and Sharma (2008) include a new control variable for audit fees. Results show that audit fees are positively and significantly related to the ARL, suggesting that high audit fees represent greater audit effort due to the riskiness and complexity of the client lengthening the audit (Davis et al. 1993).

Another recent study conducted by Mitra and Hossain (2007) indirectly investigates the relationship between NAS and the lag in their research into NAS and institutional stock ownership for a sample of U.S. companies. In contrast to Knechel and Sharma (2008) they find no significant association exists between the ARL and NAS, measured as the ratio of NAF to total fees. However, as their model investigates the impact of the lag on NAS, they do not include a number of key variables that prior studies have shown are related to the ARL. These include the client's fiscal year end, the type of audit opinion issued and measures of client complexity such as the ratio of current assets to current liabilities and the number of lines of business the client operates in. Furthermore Mitra and Hossain (2007) use the ratio of NAF to total fees as their measure of NAS. This measure may be problematic as it fails to consider the importance of the level of NAF. While the ratio of NAF may increase the economic bond between the auditor and their client, the size of NAF alone may also contribute to this bond (Kinney and Libby, 2002). Thus the different results found in Knechel and Sharma (2008) and Mitra and Hossain (2007) may be due to differences in the variables used in each model.

Our paper contributes to this existing literature on the ARL by investigating the association of ARL with knowledge spillovers. We do this by examining the effect of NAS fees and audit fees as determinants of ARL.[1] Our paper provides more up to date evidence of the ARL than the existing literature, by using data from a more

recent time period, 2004 and 2005. Furthermore by using the 2004 and 2005 time period our paper contributes to the literature by investigating the ARL in a recent period after the collapse of Arthur Andersen and the implementation of the Sarbanes Oxley Act (SOX)[2] have drawn considerable public attention to non-audit services. While accounting firms in New Zealand are still permitted to provide NAS to audit clients (unlike in the U.S. where SOX prohibits firms from providing audit clients with all NAS except taxation services) the New Zealand Institute of Chartered Accountants' (NZICA) Code of Ethics requires auditors to identify and mitigate any risks to their independence arising from the provision of NAS. As a result of this requirement, and because NAS can attract negative publicity, many companies no longer purchase NAS from their auditors. It is therefore interesting to see whether NAS continue to have a significant effect on the ARL like that identified by Knechel and Payne (2001) and whether the effect has more recently eroded as found by Knechel and Sharma (2008).

3.0 Hypothesis Development

Views about the effect of non-audit services include arguments that they lead to loss of independence. In a speech to the National Association of State Boards of Accountancy, the chairman of the SEC stated that "all too often, the audit responsibility becomes more a business line used to get a foot in the door for other, more profitable services" and "Do we really believe that the investing public will see the auditor as having only rigorous, objective analysis on his mind if he *also* must consider how his work impacts strategic planning, marketing, communications, and personnel decisions?" (Levitt, 2000). In opposition to this view are statements such as that by Wallman (1996), already referred to, that NAS provides benefits to the audit

function due to the auditor learning more about the client; and other critics such as Lowenstein (2002) who states “Securities and Exchange Commission Chairman Harvey Pitt doesn't get it” (p. A22) when he says auditor independence is the cause of the Enron collapse. Arrunada (1999, page 513) argues that “The provision of non-audit services by auditors to their audit clients reduces total costs, increases technical competence and motivates more intense competition.”

If these views are correct, then when NAS are provided an auditor should be able to complete the audit work in a shorter period of time due to this extra knowledge gained from performing NAS. Simunic, (1984) argued that an auditor who carries out non-audit services would be able to provide services to the client at a lower unit cost; as a result, the client would purchase a greater quantity of audit services, substituting them for internal control costs, and the overall audit fee would rise. His evidence was consistent with this argument. Subsequent evidence about audit fees or hours in studies by Palmrose (1986), Abdel-Khalik (1990), Davis et al. (1993) and O’Keefe et al. (1994) is not consistent with this view and does not show that audit effort is reduced by knowledge spillovers. However, Antle et al. (2006) find a positive relationship between NAS and audit fee, consistent with knowledge spillovers.

The effect of NAS on the ARL is examined more directly by Knechel and Payne (2001) and Knechel and Sharma (2008). Knechel and Payne (2001) find that companies which purchase tax services from their auditor have a longer ARL, while companies purchasing management advisory services have a shorter ARL. This is attributed to tax services potentially reflecting added complexity, which increases the required audit work and the ARL. By contrast the results suggest management advisory services have a synergistic impact on the ARL (Knechel and Payne, 2001). Knechel and Sharma (2008) report a negative relationship between total NAF and the

ARL in 2001 and 2002 (i.e., before the passage of SOX), but not in 2003. They suggest that the efficiency benefits of knowledge spillovers have eroded since that legislation was passed, preventing auditors from offering certain types of services. Knechel and Sharma (2008) also suggest that knowledge spillovers could lead to greater audit effectiveness, not greater efficiency. Increased effectiveness could take either less time, or more time, particularly if it results in the auditor being more likely to identify problem areas that require negotiating with the client over changes to the financial statements. There are also good reasons to argue that knowledge spillovers could lead to an audit taking more time, as Simunic (1984) suggests that they will lead to demand for more of an auditor's services, and as Knechel and Payne (2001) found a positive relationship. In summary, prior literature contains arguments that companies that purchase both audit services and NAS from the same external audit firm benefit from a positive externality in the form of a knowledge spillover. It follows that the more knowledge an auditor has of a company and its operations, the faster the auditor can complete the audit, *ceteris paribus;* but there are also arguments that increased effectiveness will occur and the audit will take either more or less time. Therefore the hypothesis we empirically investigate is:

H1: There is a relationship between the magnitude of NAS purchased from a company's principal auditor and the ARL.

4.0 Research Method

4.1 Sample

The data in this paper covers a two-year period from 2004 to 2005. The sample includes all New Zealand companies listed on the New Zealand Stock Exchange (NZSX) for the period, which had annual reports available from either IRG

Online, the New Zealand Companies Office website or the website of the respective company, for the period examined. Data on the variables described in the next section was obtained from IRG Online and if this was not sufficient, from the annual reports. Companies were excluded from the sample if they changed their balance date during the sample period, if the audit fees were paid by the parent company or if the necessary information was not available due to the company listing during 2004 and not disclosing a 2004 annual report or delisting during 2006 and not disclosing a 2005 annual report. A total of 14 companies were excluded due to these criteria, resulting in a final sample of 130 firms or 260 firm year observations.

4.2 Empirical Model

To examine the relationship between the ARL and NAS fees for New Zealand listed companies for each of the years 2004 and 2005 we use a multiple regression model consisting of the dependent variable (ARL), explanatory variable and thirteen control variables:

$$\begin{aligned} ARL = {} & \alpha_0 + \alpha_1(NAS) + \alpha_2(AUD) + \alpha_3(SIZE) + \alpha_4(OWN) + \alpha_5(FINCOND) + \alpha_6(IND) \\ & + \alpha_7(SUBS) + \alpha_8(CA/TA) + \alpha_9(LOSS) + \alpha_{10}(YREND) + \alpha_{11}(BIG4) \\ & + \alpha_{12}(AUDOPIN) + \alpha_{13}(IFRS) + \varepsilon \end{aligned} \quad (1)$$

Eleven of the explanatory variables used are from prior research: non-audit service fees (NAS), company size (SIZE), overseas ownership (OWN), financial condition (FINCOND), industry classification (IND), degree of diversification (SUBS), reporting of a loss (LOSS), financial year-end (YREND), auditor size (BIG4) and audit opinion type (AUDOPIN). In addition our model includes three additional variables: audit fees (AUDFEE), whether the company is an early adopter

of IFRS (IFRS) for 2005 and the ratio of current assets to total assets to further measure a company's complexity (CA/TA). Table 1 lists each variable. We now discuss how each variable was measured and the predicted effect.

Insert Table 1 here

4.2.1 Dependent Variable

ARL (ARL)

Consistent with prior literature the ARL is defined as the period between a company's fiscal year end and the date of the auditor's report, measured in days.

4.2.2 Explanatory Variable

Non-audit Service Fees (NAS)

If knowledge spillovers occur, an auditor who performs NAS should be able to complete the audit work in a shorter period of time. If there is a lack of independence, there may be reduced efficiency and a longer time period. NAS is initially measured as the total amount of fees paid to the company's principal auditor that are not for audit work. Subsequently we use alternative measures of non-audit services based on auditor independence research. These include a dummy variable for the existence of NAS; the total fees for both audit and non-audit services; the ratio of non-audit services to audit fees; the log of non-audit fees and the log of total fees; and the importance to the auditor of the client's non-audit fees, audit fees and total fees (measured by the ratio of the respective fee to the auditor's total fees).

4.2.3 Control Variables

Audit Fees (AUD). The variable audit fee (AUDFEE) is measured as the total amount paid to the company's principal auditor for year-end and interim audit work. We do

not predict a direction for the relationship between audit fees and the ARL due to conflicting arguments in prior studies.[3]

Company Size (SIZE). We use the natural log of total assets to proxy for company size. We predict a negative relationship between company size and the ARL due to large firms being able to exert more pressure on auditors for timely reporting and in addition large firms may possess stronger internal controls which the auditors can rely on, thus reducing the amount of audit work to be done at year-end.

Overseas Ownership (OWN). We measure overseas ownership as the percentage ownership by a major overseas shareholder. Following Gilling (1977) we expect a negative relationship between the ARL and overseas ownership which is caused by large external investors placing pressure on the auditor to complete the audit in as shortest time as practical, so as to obtain timely information. As sensitivity tests, we also used dummy variables for overseas ownership greater than threshold levels of 80%, 50%, 40%, 20% and 10%.

Financial Condition (FINCOND). Following previous studies (Bamber et al., 1993; Schwartz and Soo, 1996; Jaggi and Tsui, 1999) we use the company's probability of bankruptcy, estimated from Zmijewski's (1984) bankruptcy prediction model, to proxy for financial condition[4].

$$ZFC = -4.336 - 4.513(ROA) + 5.679(FINL) + 0.004(LIQ) \quad (2)$$

where

ZFC = an estimate of Zmijewski's financial condition index,

ROA = return on assets (the ratio of net income to total assets),

FINL = financial leverage (the ratio of total debt to total assets), and

LIQ = liquidity (the ratio of current assets to current liabilities).

The higher (lower) the value of the index, the higher (lower) the likelihood of failure and the weaker (stronger) the company's financial condition. Companies with a weaker financial condition will expose the auditor to greater audit risk, thus increasing the ARL.

Industry (IND). We use a dummy variable equal to 1 for companies with SIC codes 6000-6999[5] and 0 otherwise to proxy for industry classification and predict a negative relationship as financial services companies hold little inventory or fixed assets so are less complex to audit (Bamber et al., 1993).

Subsidiaries (SUBS). Following Ng and Tai (1994) we use the number of principal subsidiaries held by the company as a proxy for complexity and diversification and expect that this is positively related to the ARL.

Current Assets/Total Assets (CA/TA). Companies with large amounts of current assets require the auditor to perform more testing at year-end. Therefore we predict there will be a positive relationship between the ratio of current assets to total assets and the ARL.

Loss (LOSS). Companies reporting a loss for the years examined were coded as 1, as they were expected to have a longer ARL, (Courtis, 1976; Ashton et al., 1989; Carslaw and Kaplan, 1991; Bamber et al., 1993; Schwartz and Soo, 1996), due to the company wishing to delay the bad news and/or the auditor being more cautious during the engagement in response to the greater risk. All other companies were allocated a 0.

Financial Year-end (YREND). In New Zealand the two most common year-end dates are March 31 and June 30 and the period between these dates (and shortly after) is considered the busy season. We use a dummy variable equal to 1 if the company has a year-end that falls between March 31 and June 30, inclusive and 0 otherwise and

predict a positive relationship between YREND and the ARL (Dyer and McHugh, 1975; Ng and Tai, 1994; Knechel and Payne, 2001).

Auditor Size (BIG4). We assign Big 4 audit firms a value of 1 and all others a 0 and predict that Big 4 audit firms will be associated with shorter ARLs. Big 4 audit firms are larger and therefore may be able to audit more efficiently and have a greater flexibility in scheduling to complete audits on a timely basis.

Audit Opinion Type (AUDOPIN). We use a dummy variable equal to 1 if the company received a non-standard audit report (anything other than a standard unqualified report) and 0 otherwise. We expect a positive relationship between the ARL and companies receiving a non-standard audit opinion.

IFRS Early Adopter (IFRS). In December 2002 the New Zealand Accounting Standards Review Board announced that New Zealand entities' financial reports will have to comply with International Financial Reporting Standards (IFRS) for periods commencing 1 January 2007. Entities also have the option of early adoption from 1 January 2005. In light of this, for tests carried out for the year 2005 we include a variable equal to 1 if the company is an early adopter of IFRS and 0 otherwise. First time reporting under IFRS is expected to increase the ARL, as it will increase the amount of work auditors have to do to ensure compliance with the new standards, due to the complexity of IFRS. Therefore we expect a positive relationship between IFRS and the ARL.

5.0 Results

5.1 Descriptive Statistics

Table 2 presents the descriptive statistics for the entire sample for both 2004 and 2005. Audit fees increased substantially in this period and NAS fees also

remained at a high level. The mean (median) ARL is 63.8 (57) days for 2004 and 60.31 (55) days for 2005. The minimum ARL is 27 days for 2004 and 21 days for 2005, while the maximum ARL is 225 days for 2004 and 151 days in 2005.[6] The mean (median) NAS purchased is $105,107 ($17,000) for 2004 and $119,343 ($17,455) for 2005. The mean (median) audit fee increased from $150,260 ($57,500) in 2004 to $173,733 ($67,000) in 2005. In addition it appears that due to the large differences between the mean and median of NAS and AUD that these variables may be exhibiting non-normal distributions. We perform to ensure our main results are robust to this possibility. In general, the variables are stable from year to year and have approximately the values expected.

Insert Table 2 here

The financial condition (FINCOND) of companies in our sample has worsened from a ZFC index mean (median) of -1.62 (-2.09) in 2004 to 0.23 (-2.09) in 2005. It appears that a few firms are driving the differences in the mean (FINCOND has a maximum of 6.86 in 2004 which rises to 213.22 in 2005) and there is no significant difference over the two years examined. For the remaining control variables there is no substantial difference in the mean values across the different years.

We perform correlation analyses to identify pairs of variables with correlations (Pearson and Spearman) greater than 0.80, as this threshold indicates potential multicollinearity problems (Gujarati 2003). Table 3 shows a significant positive correlation between audit fees and NAF, audit fees and size and audit fees and subsidiaries. Table 3 also shows a significant negative correlation between size and reporting a loss. These coefficients are expected and consistent with prior research (e.g. Knechel and Sharma, 2008 find a similar correlation between audit fees and

NAF and between audit fees and size). These high correlations arise because large firms tend to be more complex and require more audit resources and more NAS. In addition larger firms are likely to be more profitable and less likely to report losses.

Insert Table 3 here

We have also noted some additional pairs of correlations that may be problematic. The variables AUDOPIN and LOSS are significantly correlated with a number of other variables. AUDOPIN is negatively correlated with firm size and positively correlated with financial condition and reporting a loss, in both years examined. This may indicate that the dummy variable for receiving an opinion other than standard unqualified may actually be measuring financial condition and/or profitability, which is very likely as the variable AUDOPIN includes audit opinions issued due to going concern problems. To further investigate the possible effects of this multicollinearity we rerun the main regressions, omitting the AUDOPIN variable. We report further sensitivity tests in section 6 to determine whether a multicollinearity problem exists.

Examination of the bivariate correlations between ARL and the explanatory variables suggest that a longer lag is associated with greater probability of failure; with losses; with adoption of IFRS; and with a non-Big 4 auditor. There is very mixed evidence regarding the association between ARL and NAS, with significant negative correlation in 2004 (Spearman but not Pearson) and a significant positive correlation in 2005 (Pearson but not Spearman). It is clear that multivariate testing will be necessary to assess whether these effects hold when the other variables are controlled for. There is also some evidence of a negative correlation between size and ARL.

5.2 Multivariate Results

Table 4 presents the multiple regression results. There is a significant positive relationship between NAS and the ARL in 2005 and in the pooled results (although not in the results for 2004). There is thus some evidence from these tests of knowledge spillovers that lead to a longer audit report lag. Four of the control variables are significant at the conventional levels in one or both years. The ARL is negatively associated with the BIG4 variable at the one percent level in both years. Consistent with our prediction and prior studies (Gilling, 1977; Ashton et al., 1989; Schwartz and Soo, 1996) this indicates that Big 4 auditors are faster to complete audit engagements than non-Big 4 auditors. In addition the ARL is positively associated with AUDOPIN at the one percent level in 2004 and at the five percent level in 2005, in line with our prediction. Following research by Whittred (1980), Carslaw and Kaplan (1991), Bamber et al. (1993), Schwartz and Soo (1996) and Knechel and Sharma (2008) our paper shows that firms receiving an opinion other than a standard non-qualified opinion have longer ARLs than firms receiving standard non-qualified opinions. Furthermore the variable CA/TA is positive and significant at the five percent level in 2005 only. Consistent with our predictions this implies that firm's with large amount of current assets take longer to due to the complexity of these items but this may not be generalizable to other time periods. We also conducted tests in which FINCOND was replaced by ROA and LOSS; tests using the log of audit lag; tests using subsidiaries instead of the square root of subsidiaries; and tests excluding financial industry companies instead of controlling for them using a dummy variable. The results were virtually identical.

Insert Table 4 here

In addition four of the other control variables had signs consistent with our predictions over the two year period examined but were insignificant. SUBS, LOSS

and IFRS are all positively related to the ARL for both 2004 and 2005, suggesting that more complex clients and clients making losses may take longer to audit. SIZE was negatively related to the ARL in both years examined, although not significant. This suggests that larger clients may exert more pressure on the auditor for timely reporting or may have stronger internal controls, making the audit shorter. The variable AUD, for which we did not predict a direction is negatively related to the ARL for both years but is insignificant. The remaining four control variables have coefficients in the opposite direction of our predictions for at least one of the years examined, but are not significant.

Panel B reports the tests of alternative measures of NAS. To further test whether our results are sensitive to the measures of NAF and AUD used and to check if our results are robust to the possibility of non-normal distributions of these variables we follow prior research such as Ashton et al. (1987), Jaggi and Tsui (1999) and Knechel and Sharma (2008) and rerun the regression for equation 1 using the natural log of total NAS purchased as the measure of NAF and the natural log of total audit fees purchased as the measure of AUD. We also use alternative measures for whether non-audit services are likely to affect the independence of the auditor, based on the measures in previous studies by Frankel, et al. (2002); Ashbaugh et al. (2003); Chung & Kallapur (2003); Larcker and Richardson (2004); and Hay et al. (2006a).

These alternative measures are the audit fee ratio (ratio of NAS to total audit and NAS fee) and importance measures for each of audit fee, non-audit fee and total fees, computed as the ratio of the fee for this company divided by the audit firm's total fees. In addition we use abnormal audit fee, computed as the residual from a model of the log of audit fees regressed on explanatory variables[7] for size, complexity and risk based on those discussed in Hay, Knechel and Wong (2006b). The results

from the tests using these alternative measures of auditor independence show that none of the coefficients on these alternative NAS variables is significantly associated with ARL. Thus the evidence from the positive results in Panel A is somewhat mixed as they are not supported when alternative measures of auditor independence are used. This could indicate that the results in Panel A are driven by greater efficiency from the knowledge spillovers, not by loss of independence.

5.3 Components of NAS and the ARL

To investigate whether our results are sensitive to the measure of NAF used, we follow Knechel and Payne (2001) and break down the total NAF figure into four components: tax services, management advisory services (MAS), other assurance services and not specified.[8] We conduct this test as prior research has shown that the provision of MAS and tax services have opposite effects on the audit. Simunic (1984), Palmrose (1986) and Knechel and Payne (2001) find that the provision of MAS results in knowledge spillovers or reduces start-up time and/or makes staff members more efficient. This would lead to a shorter ARL. In contrast Davis et al. (1993) and Knechel and Payne (2001) state that firms who purchase large amounts of tax services may have complex tax situations that have a direct effect on the financial statements and must be resolved before an audit opinion can be issued, which would lead to a longer ARL.

Insert Table 5 here

Table 5 shows the results of equation 1 with the four classifications of NAS substituted for total NAS. The four explanatory variables for tax services, MAS, other assurance services and 'not specified' are not significant in 2004 and the pooled results. In 2005, 'not specified' is positive and significant, and the three other

categories are not significant. It seems that the not specified variable was driving the results observed in the main regression. This result is difficult to interpret as we are unable to determine what non-audit services are included under 'not specified.' In addition the direction and significance of the control variables are consistent with the results of our main regression. The positive significant coefficients on AUDOPIN and the negative significant coefficients on BIG4 provide further support for the results found in the main regression.

5.4 Effect on ARL in subsequent periods

It is possible that knowledge spillovers do not occur immediately, but appear in later periods. This issue has not been examined in previous studies. In Table 6, we report results of tests including the control variables and NAS in both 2004 and 2005 regressed on ARL. The results show that NAS in 2004 are significantly negatively related to NAS in 2005. Thus there is evidence that knowledge spillovers from NAS in 2004 allow auditors to conduct a faster audit in 2005. This appears to indicate that a learning period needs to occur before knowledge spillovers can take place.

Insert Table 6 here

6.0 Additional Analyses

To test the robustness of our results presented in section 5 we perform a number of additional tests. These include identifying and controlling for possible multicollinearity and heteroscedasticity, testing the affect of the components of NAS on the ARL and repeating the regressions using alternative measures of NAS and the ARL.

6.1 Multicollinearity Diagnostics

Due to the correlation tests identifying possible collinearity problems between the variable used in equation 1 we perform further tests to identify whether there is multicollinearity present. This may be a problem in our analysis as one or more of the control variables may be capturing the effects of the explanatory variable, NAF, which we wish to observe. Firstly we calculate the variance inflation factor (VIF) for each variable in each year. All of the VIFs are less than ten for each variable in each year, so this indicates that multicollinearity is not a problem. Secondly we compute the condition index for each year. In both 2004 and 2005 the condition index is greater than thirty which indicates severe multicollinearity. To address these conflicting results and the possible problem of multicollinearity we delete the variable SIZE which is the most collinear with the NAS variable. In untabulated results we find that the removal of this variable has no effect on the results reported in Tables 4, 5 and 6. Thus it appears that our results are robust to the possible problem of multicollinearity.

6.2 Removal of audit variables

The inclusion of the audit fee variable in our regression model may be problematic, as it may be determined by the same factors that determine the ARL (e.g. client size, financial condition). We ran further tests which showed that our main findings are robust to the exclusion of the audit fee variable from the model. Due to the possible multicollinearity identified between the AUDOPIN variable and several of the other control variables, including SIZE, FINCOND and LOSS (see section 5.1), we also rerun the regression for equation 1 removing the variable AUDOPIN. The results (untabulated) are consistent with those in Table 4. In addition the variable

LOSS is now weakly significant in both years, showing a positive relationship with the ARL and the variable FINCOND is weakly positive and significant in 2004 only. This indicates that the variable AUDOPIN is measuring firms who are in poor financial condition and that these firms have a longer ARL.

6.3 Heteroscedasticity

We undertake additional testing to test whether the variables used in equation 1 conform to the heteroscedasticity assumption of the linear regression model. If the heteroscedasticity assumption does not hold the regression may give biased estimates of the coefficients for the variables used in equation 1. To test whether heteroscedasticity is likely we use the Goldfeld-Quandt Test. This involves ranking the observations in ascending order according to the NAF values. We then omit the central eighteen observations and divide the remaining observations into two groups of forty-six observations. Next we fit separate regressions to each group and compute the ratio of the residual sum of squares divided by the degrees of freedom for the larger NAF values over the residual sum of squares divided by the degrees of freedom for the smaller NAF values. We do this separately for both the 2004 and 2005 samples. For 2004 the ratio is greater than the critical *F* at the five percent level, so we are unable to reject the possible existence of heteroscedasticity. However, for 2005 the ratio is less than the critical *F* at the five percent level so heteroscedasticity is unlikely in this year. Due to the results in 2004 indicating that heteroscedasticity may be likely we perform the regression for this year's sample again using White's Heteroscedasticity-Consistent Variances and Standard Errors to remedy this potential problem. The results (untabulated) are consistent with the results from our main multivariate tests, indicating that the results do not suffer from heteroscedasticity.

7.0 Conclusion

Our paper seeks to provide empirical evidence about the argument by the accounting profession that the provision of NAS to audit clients creates knowledge spillovers that result in a more efficient audit. Our paper provides evidence of a positive association between the ARL and NAS in 2005, indicating that firms which purchase large amounts of NAS are complex and take longer to audit. In further testing, we find that there is a positive association between NAS in the current year and ARL, but a negative association between NAS in the previous year and ARL. We further provide evidence that Big 4 auditors are associated with a shorter ARL and the issuance of a non-standard unqualified audit opinion is associated with longer ARLs. Furthermore we find some evidence that complex firms experience longer lags but this is not consistent over the years examined. We find that these results are robust to alternative measures of the ARL and NAF. In addition the results remain consistent when the audit fee variable is dropped from the analysis due to possible multicollinearity and when further testing is undertaken to remedy possible heteroscedasticity.

These results imply that knowledge spillovers provide beneficial effects in allowing a quicker audit, but that there is a learning curve, and this effect does not occur until the subsequent year. This pattern of observations also suggest that this result is due to a faster audit, not loss of independence, which might be expected to take immediate effect. Thus the provision of NAS appears to have a beneficial effect and so prohibiting them would have a detrimental effect.

Our paper is subject to several limitations that may provide areas of future research. Firstly the sample sizes are relatively small. This limitation is further

contributed to by the fact that many firms now choose to reduce the amount of NAS purchased from their auditor, resulting in many of the NAS observations being zero. Again this may mean that our empirical testing failed to pick up the existence of a relationship between the ARL and NAS. Future studies could follow Knechel and Sharma (2008) and investigate the relationship between the ARL and NAS in the pre- and post-SOX period, in a New Zealand setting. This will provide evidence as to whether knowledge spillovers previously existed, but are no longer evident due to many firms choosing to reduce the amount of NAS purchased due to negative publicity.

Secondly our measure of the ARL may not accurately measure the actual time it takes the auditor to complete the audit. As we do not have access to internal audit firm data we do not know the date that the audit work actually started. As a result our measure of the ARL includes the time taken for the client to prepare the financial statements and make them available to the auditor. Thus it is possible that our measure overstates the actual ARL and is not measuring auditor efficiency. Additionally when we perform additional testing using the components of NAS we rely on the classification provided by each company in our sample in their financial report. However as noted many companies did not separately classify the types of NAS purchased. In addition it is unknown how accurate these classifications are. Future studies could try to obtain access to internal accounting firm data regarding the ARL and NAS. Data that allows the ARL to be broken down into its components: the scheduling lag, the fieldwork lag and the reporting lag, would allow a more accurate investigation into whether the provision of NAS results in a more efficient audit. Similarly data classifying the types of NAS purchased would provide further evidence as to whether certain types of NAS affect the ARL and lead to knowledge spillovers.

The results are interesting and show that NAS can have a measurable effect on improving the efficiency of an audit but not necessarily in the same year when the services are provided. We suggest future research should extend these tests to other settings and periods in order to examine whether this effect is particular to New Zealand, or to the period examined (when IFRS were being introduced), and whether there is a significant effect over longer periods than one year.

Notes

[1] In addition our model investigates the effect of another new variable relevant to the New Zealand market, the implementation of International Financial Reporting Standards (IFRS).

[2] The Sarbanes-Oxley Act does not apply directly to most New Zealand companies, but has helped to publicize the potential negative effects of NAS.

[3] Simunic's (1980) economic model of audit pricing suggests that higher audit fees are associated with the auditor having to spend more hours on the audit (audit effort) as well as the client being a higher risk, meaning that the ARL would be longer. However arguments by Palmrose (1986) and Carcello et al. (2004) that higher audit fees correspond with higher audit quality, contradict this. Furthermore Knechel and Sharma (2008) claim that clients may be willing to pay higher audit fees for a faster audit, to allow more timely announcements to the market. These two arguments would result in a shorter ARL.

[4] Carslaw and Kaplan (1991) use debt as a measure of financial condition but Zmijewski's model incorporates this measure and provides a more complete indication of financial condition. We also conduct sensitivity tests using ROA and debt separately.

[5] SIC codes for our sample were obtained from the Mergent Online Database.

[6] The large range for both years may indicate the presence of outliers in our sample. We perform an additional regression where we delete observations greater than three standard deviations from the mean. Untabulated results show that our main regression results are robust to the inclusion of these observations, with the exception of the IFRS variable, which becomes positive and significant at the five per cent level without these observations.

[7] Log of total assets, square root of the number of subsidiaries, ratio of current assets to total assets, return on assets, dummy variable for a loss in the last three years, audit opinion and a dummy for Big 4 auditor.

[8] The variable 'not specified' refers to firms who do not classify the NAF figure into the type of services purchased in the financial statements.

8.0 *References*

Abdel-Khalik, A. (1990), The jointness of audit fees and demand for MAS: A self-selection analysis. *Contemporary Accounting Research* 6 (2): 295-322.

Antle, R., Gordon, E., Narayanamoorthy, G. & L. Zhou, (2006), The joint determination of audit fees, non-audit fees and abnormal accruals, *Review of Quantitative Finance & Accounting*, 27: 236-366.

Arrunada, B. (1999), The provision of non-audit services by auditors - let the market evolve and decide, *International Review of Law and Economics*, 19(4): 513-531.

Ashbaugh, H., LaFond, R. & Mayhew, B.W. (2003), Do nonaudit services compromise auditor independence? Further evidence, *Accounting Review*, 78 (3), 611-640.

Ashton, R.H., Willingham, J.J. & Elliot, R.K. (1987), An empirical analysis of audit delay, *Journal of Accounting Research*, 25, 275-292.

Ashton, R.H., Graul, P.R. & Newton, J.D. (1989), Audit delay and the timeliness of corporate reporting, *Contemporary Accounting Research*, 5 (2), 657-673.

Ashton, R.H., & Newton, J.D. (1989), The association between audit technology and audit delay, *Auditing: A Journal of Practice and Theory*, 8, 22-37.

Bamber, E.M., Bamber, L.S. & Schoderbek, M.P. (1993), Audit structure and other determinants of ARL: an empirical analysis, *Auditing: A Journal of Practice and Theory*, 12, 1-23.

Carslaw, C., & Kaplan, S.E. (1991), An examination of audit delay: further evidence from New Zealand, *Accounting and Business Research*, 22, 21-32.

Chung, H. & Kallapur, S. (2003). Client importance, nonaudit services, and abnormal accruals, *Accounting Review*, 78 (4), 931-955.

Courtis, J. K. (1976), Relationships between timeliness in corporate reporting and corporate attributes, *Accounting and Business Research,* 25, 45-56.

Davis, B., & Whittred, G.P. (1980), The association between selected corporate attributes and timeliness in corporate reporting: further analysis, *Abacus,* 16 (1), 48-60.

Davis, L.R., Ricchiute, D.N. & Trompeter, G. (1993), Audit effort, audit fees, and the provision of nonaudit services to audit clients, *The Accounting Review,* 68 (1), 135-150.

DeFond, M. L., Raghunandan, K. & Subramanyam, K. R. (2002), Do non-audit service fees impair auditor independence? Evidence from Going Concern Audit Opinions, *Journal of Accounting Research*, 40, 1247-1274.

Dyer, J.C., & McHugh, A.J. (1975), The timeliness of the Australian annual report, *Journal of Accounting Research,* 13 (2), 204-219.

Frankel, R. M., Johnson, M. F., & Nelson, K. K. (2002), The relation between auditors' fees for nonaudit services and earnings management, *The Accounting Review,* 77, 71-105.

Gilling, D. M. (1977), Timeliness in corporate reporting: some further comment, *Accounting and Business Research,* 2, 34-36.

Gujarati, D. N. (2003), *Basic Econometrics* (McGraw-Hill, New York).

Hay, D., Knechel, W. R., & Li, V. (2006a), Non-audit services and auditor independence: New Zealand evidence, *Journal of Business Finance and Accounting*, 33, 715-734.

Hay, D., Knechel, W. R. & Wong, N. (2006b). Audit Fees: A Meta-Analysis of the Effect of Supply and Demand Attributes. *Contemporary Accounting Research,* 23 (1) (Spring): 141-192.

Jaggi, B. & Tsui, J. (1999), Determinants of ARL: further evidence from Hong Kong, *Accounting and Business Research,* 30, 17-28.

Kinney W.R. & Libby, R. (2002), Discussion of 'The relation between auditors' fees for nonaudit services and earnings management', *The Accounting Review,* 77, 107-114.

Knechel, W.R. & Payne, J.L. (2001), Additional evidence on Audit Report Lag, *Auditing: A Journal of Practice and Theory,* 20, 137-146.

Knechel, W. R. & Sharma, D.S. (2008). Auditor provided non-audit services and audit effectiveness and efficiency, Paper presented at the International Symposium on Audit Research, Los Angeles.

Krishnan, J., Sami, H. & Zhang, Y. (2005), Does the provision of nonaudit services affect investor perceptions of auditor independence?, *Auditing: A Journal of Practice and Theory*, 24, 111-135.

Larcker, D. & Richardson, S. (2004). Fees paid to audit firms, accrual choices, and corporate governance. *Journal of Accounting Research* 42 (3): 625-658.

Levitt, A. (2000). A Profession at the Crossroads. Speech by the chair of the U.S. Securities and Exchange Commission to the National Association of State Boards of Accountancy, Boston, Massachusetts, September 18, 2000.

Lowenstein, R. (2002), Auditor independence: The SEC Chairman doesn't get it, *Wall Street Journal*, 239 (16), A.22.

Mitra, S. & Hossain, M. 2007, Ownership composition and non-audit service fees, *Journal of Business Research,* 60, 348-356.

Ng, P.H., & Tai, Y.K. (1994), An empirical examination of the determinants of audit delay in Hong Kong, *British Accounting Review,* 26, 43-59.

O'Keefe, T. B., Simunic, D. A. & Stein, M. T. (1994), The production of audit services: evidence from a major accounting firm, *Journal of Accounting Research,* 32 (2): 241-261.

Palmrose, Z. (1986), The effect of nonaudit services on the pricing of audit services: further evidence, *Journal of Accounting Research,* 34, 405-411.

Schwartz, K.B. & Soo, B.S. (1996), The association between auditor changes and reporting lags, *Contemporary Accounting Research,* 13, 353-370.

Simunic, D.A. (1980), The pricing of audit services: theory and evidence, *Journal of Accounting Research,* 18, 161-190.

Simunic, D.A. (1984), Auditing, consulting and auditor independence, *Journal of Accounting Research,* 22, 679-702.

Wallman, S. M. H. (1996), The future of accounting, Part III: Reliability and auditor independence, *Accounting Horizons,* 10 (4), 76-97.

Whittred, G.P. (1980), Audit qualification and the timeliness of corporate annual reports, *The Accounting Review,* 4, 563-577.

Zmijewski, M. E. (1984). Methodological issues related to the estimation of financial distress prediction models, *Journal of Accounting Research* 22 (Supplement): 59-82

Table 1

Definitions of Variables and Expected Effect on the Audit Report Lag

Variable	*Explanation*	*Expected Relationship with ARL*
ARL (ARL)	Number of days from financial year-end date to the date the audit report is signed.	NA
Non-audit Services Fees (NAS)	Total fees paid to principal auditor that are not for audit services.	Positive or negative
Audit Fees (AUD)	Total fees paid to principal auditor for audit services.	Positive
Company Size (SIZE)	Natural log of total assets.	Negative
Overseas Ownership (OWN)	% of total securities owned by major overseas shareholder.	Negative
Financial Condition (FINCOND)	Probability of bankruptcy estimated from Zmijewski's (1984) bankruptcy prediction model.	Positive
Industry (IND)	Industry classification represented by a dummy variable: 'financial' companies assigned 1, otherwise 0.	Negative
Subsidiaries (SUBS)	Number of principal subsidiaries.	Positive
Current Assets/Total Assets (CA/TA)	Ratio of current assets to total assets.	Positive
Loss (LOSS)	Sign of current year income represented by a dummy variable equal to 1 if reporting a loss, otherwise 0.	Positive
Financial Year-end (YREND)	Dummy variable equal to 1 if year-end falls between March 31 and June 30, otherwise 0.	Positive
Auditor Size (BIG4)	Dummy variable equal to 1 if auditor is a Big 4 firm, otherwise 0.	Negative
Auditor Opinion Type (AUDOPIN)	Dummy variable equal to 1 for opinions other than standard, standard opinions a 0.	Positive
IFRS Early Adopter (IFRS)	Dummy variable equal to 1 if company adopted IFRS reporting standards, otherwise 0.	Positive

Table 2
Descriptive Statistics for the Audit Report Lag, Non-Audit Services Fees and Control Variables by Year

	2004					*2005*				
	Mean	*Median*	*Std Deviation*	*Minimum*	*Maximum*	*Mean*	*Median*	*Std Deviation*	*Minimum*	*Maximum*
ARL	63.80	57.00	25.65	27.00	225.00	60.31	55.00	21.45	21.00	151.00
NAS	105,107	17,000	248,320	0	1,961,000	119,343	17,454	337,336	0	2,938,000
AUD	150,260	57,500	283,596	5,000	2,000,000	173,733	67,000	342,046	5,000	2,751,000
SIZE	17.95	17.99	2.04	13.10	22.74	17.99	18.25	2.25	8.29	22.73
TOTAL ASSETS	346,667,807	64,919,000	98,540,791	488,000	7,500,000,000	375,372,896	84,006,500	938,539,891	4,000	7,421,000,000
OWN	8.41	0	20.92	0	100	8.96	0	22.05	0	100
FINCOND	-1.62	-2.09	2.45	-4.74	14.45	0.23	-2.09	19.14	-4.76	213.22
IND	0.30	0.00	0.46	0.00	1.00	0.30	0.00	0.46	0.00	1.00
SUBS	7.44	5.00	8.67	0.00	48.00	7.62	4.00	8.73	0.00	40.00
CA/TA	0.41	0.38	0.35	0.00	2.94	0.41	0.40	0.35	-0.25	2.61
LOSS	0.28	0.00	0.45	0.00	1.00	0.27	0.00	0.45	0.00	1.00
YREND	0.74	1.00	0.44	0.00	1.00	0.74	1.00	0.44	0.00	1.00
BIG4	0.79	1.00	0.41	0.00	1.00	0.78	1.00	0.42	0.00	1.00
AUDOPIN	0.08	0.00	0.27	0.00	1.00	0.10	0.00	0.30	0.00	1.00
IFRS						0.05	0.00	0.21	0.00	1.00

Variables as defined in Table 1.

Table 3
Pearson and Spearman Correlations between Explanatory Variables

	ARL	*NAS*	*AUD*	*SIZE*	*OWN*	*FINCOND*	*IND*	*SUBS*	*CA/TA*	*LOSS*	*YREND*	*BIG4*	*AUDOPIN*	*IFRS*
Year 2004														
ARL		-.138	-.160	-.411(**)	-.031	.270(**)	.027	-.091	.054	.382(**)	-.038	-.454(**)	.498(**)	
NAS	-.244(**)		.554(**)	.402(**)	-.025	.098	-.085	.538(**)	.033	-.142	.062	.197(*)	-.118	
AUD	-.300(**)	.615(**)		.575(**)	-.025	.081	-.062	.587(**)	.049	-.185(*)	-.025	.183(*)	-.126	
SIZE	-.410(**)	.545(**)	.781(**)		.075	-.157	.096	.496(**)	-.132	-.582(**)	-.031	.426(**)	-.487(**)	
OWN	.046	-.092	-.020	-.008		.125	-.027	-.073	-.070	.046	-.083	-.023	.007	
FINCOND	.264(**)	-.039	.090	-.052	.222(*)		.132	.144	.436(**)	.320(**)	.068	-.186(*)	.362(**)	
IND	.078	-.014	.068	.131	.017	.028		.037	.076	-.105	-.145	-.037	.000	
SUBS	-.093	.461(**)	.670(**)	.441(**)	-.085	.144	.060		.129	-.236(**)	.022	.107	-.132	
CA/TA	.086	.107	.146	-.172	-.021	.157	-.005	.139		.005	-.082	-.001	-.083	
LOSS	.376(**)	-.386(**)	-.444(**)	-.555(**)	.188(*)	.344(**)	-.105	-.251(**)	.045		.173(*)	-.276(**)	.466(**)	
YREND	.051	-.038	-.060	-.049	.044	.204(*)	-.145	-.042	-.016	.173(*)		-.003	-.091	
BIG4	-.445(**)	.421(**)	.355(**)	.402(**)	-.152	-.144	-.037	.050	-.041	-.276(**)	-.003		-.279(**)	
AUDOPIN	.367(**)	-.269(**)	-.292(**)	-.430(**)	.073	.335(**)	.000	-.108	-.074	.466(**)	-.091	-.279(**)		
Year 2005														
ARL		.223*	-.024	-.202*	.008	.012	-.020	-.039	.300**	-.277**	-.114	-.278**	.286**	.246**
NAS	-.111		.521(**)	.387(**)	-.020	-.032	-.093	.363(**)	.408(**)	-.168	-.054	.175(*)	-.116	.347(**)
AUD	-.178(*)	.588(**)		.502(**)	.003	-.038	-.069	.592(**)	.173(*)	-.244(**)	.035	.188(*)	-.140	.145
SIZE	-.285	.535(**)	.765(**)		.099	-.429(**)	.109	.480(**)	-.015	-.653(**)	-.066	.410(**)	-.480(**)	.098
OWN	.101	-.084	.015	.008		-.005	.045	-.090	-.051	-.048	-.065	.031	.009	-.040
FINCOND	.315(**)	.011	.057	-.040	.185(*)		-.047	-.075	-.134	.192(*)	.077	-.194(*)	.318(**)	-.019
IND	.007	.056	.071	.130	-.005	.042		.030	-.017	-.019	-.145	-.052	.006	.096
SUBS	-.050	.387(**)	.647(**)	.450(**)	-.122	.084	.046		.091	-.283(**)	.010	.096	-.192(*)	.102
CA/TA	.159	.090	.137	-.201(*)	.041	.187(*)	-.048	.151		-.011	-.116	.039	-.066	.347(**)
LOSS	.329(**)	-.347(**)	-.543(**)	-.643(**)	.079	.162	-.019	-.301(**)	.034		.124	-.341(**)	.549(**)	-.134
YREND	-.032	-.043	-.096	-.065	-.017	.220(*)	-.145	-.067	-.039	.124		-.025	.023	-.370(**)
BIG4	-.276(**)	.400(**)	.378(**)	.402(**)	-.110	-.120	-.052	.049	.010	-.341(**)	-.025		-.253(**)	.030
AUDOPIN	.261	-.274(**)	-.333(**)	-.403(**)	.142	.257(**)	.006	-.215(*)	-.056	.549(**)	.023	-.253(**)		-.073
IFRS	.206(*)	.201(*)	.215(*)	.084	-.052	-.107	.096	.131	.119	-.134	-.370(**)	.030	-.073	

Variables as defined in Table 1.
Pearson correlations are reported in the top diagonal and Spearman correlations are reported in the bottom diagonal.
* Correlation is significant at the 0.05 level (2-tailed).** Correlation is significant at the 0.01 level (2-tailed).

Table 4
Multiple Regression of the Audit Report Lag on Non-Audit Services Fees and Control Variables

Panel A: Model using NAS (equation (1))

Variable	Predicted Sign	2004			2005			Pooled		
		Coefficient	t-statistic	*p*-value	Coefficient	t-statistic	*p*-value	Coefficient	t-statistic	*p*-value
Constant	+/-	97.087	2.744	.007	71.896	2.653	.009	83.419	4.335	.000
NAS	+/-	.000	-.011	.991	.000	2.591	.011	.000	2.603	.010
AUD	+/-	.000	-.365	.716	.000	-.687	.493	.305	.271	.787
SIZE	-	-.775	-.467	.641	-.388	-.256	.798	-.980	-.901	.369
OOWN	-	.049	.500	.618	.014	.171	.865	.025	.404	.686
SUBS	+	.822	.491	.624	-.275	-.189	.851	.072	.066	.947
CA/TA	+	-8.721	-.383	.702	12.339	2.161	.033	9.167	2.680	.008
IND	-	.677	.153	.879	-1.235	-.320	.750	.037	.013	.990
FINCOND	+	.426	.474	.636	-.041	-1.129	.261	-.065	-1.856	.065
LOSS	+	6.182	1.055	.294	5.327	.950	.344	5.690	1.435	.153
YREND	+	-1.328	-.287	.774	-4.603	-1.156	.250	-3.598	-1.190	.235
AUDOPIN	+	30.723	3.435	.001	14.956	2.151	.034	21.909	4.015	.000
BIG4	-	-19.137	-3.601	.000	-12.077	-2.642	.009	-15.687	-4.498	.000
IFRS	+				16.194	1.671	.097	10.760	1.497	.136
Sample		130			130			260		
Adjusted R^2		0.325			0.249			.279		
F-Ratio		6.130		.000	4.263		.000	8.641		

Variables as defined in Table 1.

Panel B: Coefficients on other independence measures in lag model

Variable	2004			2005			Pooled		
	Coefficient	t-statistic	*p*-value	Coefficient	t-statistic	*p*-value	Coefficient	t-statistic	*p*-value
Total fee	.000	-219	.827	.000	.301	.764	.000	.820	.413
NASdummy	.537	.113	.910	-2.197	-.564	.574	-2.238	-.735	.463
AFEERATIO	.223	.076	.979	-.391	-.049	.961	-1.441	-.247	.805
LnNAS	.081	.174	.862	-.157	-.420	.675	-163	-.561	.575
LnTFee	-.189	-.079	.937	-.777	-.346	.730	-.478	-.291	.771
Nfeeimp	8.966	1.030	.305	.547	.071	.943	-1.348	-.275	.784
AFeeimp	-5.678	-.580	.563	-13.023	-1.456	.148	-8.072	-1.427	.155
Tfeeimp	-.583	-.079	.937	-12.233	-1.615	.109	-6.908	-1.544	.124
Abnormal audit fee	1.539	.692	.490	3.031	1.489	.138	.837	.373	.709
Abnormal non audit fee	-.052	-.166	.868	.071	.261	.794	-.095	-.323	.747

Model (1) was estimated with each of the above variables replacing NAS in turn. The coefficients, t-statistics and p-values are extracted from each alternative model in turn.

Variables: Total fee = sum of audit and non-audit fees; NASdummy = 1 if non-audit fees apply, 0 if not; AFEERATIO = ratio of non-audit fees to total fees; LnNAS = Log of non-audit services fees; LnTFee = Log of the sum of audit and non-audit fees; Nfeeimp = importance of non-audit fee (ratio of this client's fee to the audit firm's total NAS fees); AFeeimp = importance of audit fee (ratio of this client's fee to the audit firm's total audit fees; Tfeeimp = importance of total fee (ratio of this client's fee to the audit firm's total NAS plus audit fees); Abnormal audit fee = residual from model of audit fees; Abnormal non audit fee = residual from model of non audit fees

Table 5
Multiple Regression of the Audit Report Lag and Non-Audit Services Broken Down by Type of Service

Variable	Predicted Sign	2004			2005			Pooled		
		Coefficient	t-statistic	*p*-value	Coefficient	t-statistic	*p*-value	Coefficient	t-statistic	*p*-value
Constant	+/-	74.746	13.015	.000	61.981	12.446	.000	65.296	12.047	.000
Tax Services	+/-	-.000	-.117	.907	.000	.220	.826	-.000	-.054	.957
MAS Services	+/-	-.000	-.696	.487	-.000	-.068	.946	-.000	-.320	.749
Assurance Services	+/-	.000	.642	.521	.000	.029	.977	.000	.555	.579
Not specified	+/-	.000	.299	.765	.000	3.333	.001	.000	2.238	.026
AUD	+/-	.000	-.684	.495	-.000	-2.065	.040	-.000	-1.285	.200
SIZE	-	.000	.306	.760	.000	1.136	.257	.000	.607	.545
SUBS	+	.829	.690	.491	1.039	.999	.319	.394	.350	.726
CA/TA	+	2.568	.699	.485	2.972	.942	.347	8.375	2.426	.016
OOWN	-	.014	.212	.832	-.009	-.156	.876	-.003	-.052	.959
IND	-	.097	.032	.974	-.954	-.355	.723	-.317	-.110	.912
FINCOND	+	.374	.405	.687	1.895	2.331	.022	-.065	-1.851	.065
LOSS	+	4.663	1.228	.221	11.321	3.426	.001	7.310	2.033	.043
YREND	+	-2.212	-.687	.493	-2.777	-.952	.342	-2.062	-.649	.517
BIG4	-	-20.727	-5.859	.000	-10.600	-3.450	.001	-15.776	-4.700	.000
AUDOPIN	+	31.331	5.615	.000	8.989	1.854	.065	22.799	4.308	.000
IFRS	+				15.608	2.257	.025	9.956	1.343	.181
Sample		130			130			260		
Adjusted R^2		0.315			0.260			.278		
F-Ratio		8.877		.000	6.637		.000	7.188		

Variables as in Table 1, with the addition of NAS fees for Tax services, MAS Services, Assurance services and NAS Not specified.

Table 6
Multiple Regression of the Audit Report Lag in 2005 on Non-Audit Services Fees in 2004 and Control Variables

Variable	Predicted Sign	Coefficient	t-statistic	*p*-value
Constant	+/-	82.305	3.023	.003
NAS-2004	+/-	-.000	-2.039	.044
NAS-2005	+/-	.000	3.292	.001
AUD	+/-	.000	.172	.864
SIZE	-	-1.022	-.669	.505
OOWN	-	.036	.445	.657
SUBS	+	.383	.259	.796
CA/TA	+	7.716	1.271	.206
IND	-	-1.328	-.348	.728
FINCOND	+	-.050	-1.382	.170
LOSS	+	5.104	.923	.358
YREND	+	-3.866	-.980	.329
AUDOPIN	+	13.724	1.993	.049
BIG4	-	-10.677	-2.340	.021
IFRS	+	15.119	1.576	.118
Sample			130	
Adjusted R^2			.262	
F-Ratio			4.496	

Variables as in Table 1, with the addition of NAS fees paid in 2004 (NAS-2004) and 2005 respectively (NAS-2005).