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The Effects of Recurring and Non-Recurring Non-Audit Services on Auditor Independence

Purpose: Our study examines whether there are differences between companies that purchase either recurring or non-recurring audit services and those that do not, and whether auditors discount their audit fees for either type of non-audit service.

Design/methodology/approach: We examine associations between audit and non-audit fees in New Zealand, for the period 1995 to 2001. The advantage of this setting is that data on non-audit services was disclosed in this period, and that the period pre-dates more recent controversies over whether non-audit services are permissible.

Findings: Companies that purchase any type of non-audit services from their auditors are larger and more complex than companies that purchase auditing only. Companies that obtain tax services from their auditors usually do so on a recurring basis. In contrast, consulting services do not tend to occur every year. Auditors do not discount their fees for either recurring or non-recurring non-audit services.

Research limitations/implications: While we have useful data about the type of non-audit services provided, there are limitations to the extent to which this information provides a precise measure of whether the services were recurring or not.

Originality/value: The research contributes to understanding the issues regarding auditors providing non-audit services by providing evidence that neither recurring nor non-recurring services are associated with a reduction in audit fees. This finding is relevant when considering whether regulation of non-audit services should permit certain types of services, or should prohibit all non-audit services.

Keywords: auditing; audit fees; non-audit services; auditor independence; tax services; consulting services.

Article Classification: Research paper

The Effects of Recurring and Non-Recurring Non-Audit Services on Auditor Independence

1. Introduction

The issue of non-audit services provided by auditors, and whether these services have an effect on auditor independence, continues to be controversial (e.g. Hodge and Murray 2012; Mason 2012). Previous studies have argued that recurring and non-recurring non-audit services could have different effects on auditor independence. Schneider *et al.* (2006) identify empirical work that provides conflicting evidence with some studies suggesting that there are more independence problems for non-recurring non-audit services (Beck *et al.* 1988a), while others indicate that it is the recurring services that provide the greater independence problem (Beck *et al.* 1988b; Abbott *et al.* 2007). The purpose of this study is to examine the effect of recurring and non-recurring non-audit services fees on audit fees in order to explore the issue of non-audit services and the potential loss of independence.

Previous research into the determinants of audit fees generally uses aggregated non-audit fees due to a lack of access to information about recurring or non-recurring services. However, from 1995 onwards, New Zealand companies have been required to disclose the amount paid for non-audit fees in the financial statements and auditors have provided a brief classification of those non-audit services in the audit report. This provides a unique advantage for this study in that information about the type of non-audit services can be identified. We use that data to examine whether companies purchasing recurring non-audit services are different from those that purchase non-recurring non-audit services, or those that do not purchase non-audit services. We then examine which types of service are recurring, and whether either type of non-audit service is associated with lower audit fees.

The study's findings are that companies that purchase either type of non-audit services are significantly larger than those that do not purchase non-audit services. Tax services tend to be recurring, while consulting services do not. The results show that recurring non-audit services are positively related to audit fees, while non-recurring non-audit services exhibit no relation to audit fees. There is a positive relationship between audit fees and the purchase of both recurring and non-recurring non-audit services at the same time. When two-stage least squares is used to control for joint determination of audit services and non-audit services, there is no relationship. The lack of relationship (or positive relationship) is consistent with previous studies in this area and the results of the non-recurring non-audit services support Beck *et al.*'s (1988a) suggestion of a lack of incremental bonding.

2. Literature Review

While it might be expected that providing non-audit services in addition to the audit might lead to knowledge spillovers that would enable the audit to be done more cheaply, previous studies have generally found that this is not the case. The joint provision of these services is expected to give rise to cost savings – however, a frequent finding is that there is a significantly positive association between audit and non-audit services fees paid to the incumbent auditor (Beattie and Fearnley, 2003). This positive relation between audit and non-audit services is an anomaly that has plagued researchers for many years. There are some studies that have found no relationship between audit fees and non-audit services fees such as O'Keefe *et al.* (1994), Barefield *et al.* (1993) and Abdel-khalik (1990). In general, however, Firth (2002) reports there is a consensus that for listed companies, even after controlling for client size, there is a positive association between audit fees and non-audit fees.¹

¹ An explanation for this has been presented by Simunic (1984), who suggested that knowledge spillovers would lead to a higher audit fee. The argument for this was based on the knowledge spillovers leading to auditors being able to provide a cheaper service per unit of auditing; and this cheaper service would encourage the client to buy more audit services, substituting audit services for internal controls. Simunic's (1984) argument has been

Table 1 compares prior research studies. Of the 20 papers that regressed audit fees as a function of aggregated non-audit services, only five found no significant relation between these two types of service fees, and only two found a negative relationship. These papers include a New Zealand study, Hay *et al.* (2006a) which found a positive relationship between audit fees and non-audit fees, but did not examine whether the non-audit fees were from recurring or non-recurring services. The only studies to find a negative relationship, consistent with knowledge spillovers, are a recent paper by Krishnan and Yu (2011) and an unpublished paper by Donohoe and Knechel (2009). Krishnan and Yu (2011) use a two-stage least squares approach to control for joint determination of audit fees and non-audit fees. Their data includes observations subsequent to the Sarbanes-Oxley Act in the United States, which severely restricted the non-audit services which auditors can offer, and that may have affected the results. Donohoe and Knechel (2009) find that there is a complex relationship between audit fees and non-audit services. Companies that follow aggressive tax strategies pay an audit fee premium; but this premium is reduced where they purchase tax services from their auditor, but only where the auditor is an industry specialist. Donohoe and Knechel (2009) suggest that the lower fee arises from synergies between the audit and the nonaudit services (tax in their study). These recent studies show that the issue of knowledge spillovers is still unresolved.

INSERT TABLE 1 HERE

In previous studies of audit and non-audit services, an assumption is made that audit quality does not change. If that is the case, then if fees are lower, the auditor is providing the same quality of services, but charging less, consistent with the auditor cross-subsidising the audit from other services. If fees are higher, then this indicates a higher fee for the same service and a higher profit. Considering this assumption may be helpful in interpreting the results.

dismissed by subsequent researchers such as Abdel-khalik (1990) and Solomon (1990).

An issue raised in previous research is whether the non-audit services are recurring or not. Not considering whether there are differential effects due to the recurring or non-recurring nature of the services can “muddy the waters” of the results reported (Schneider *et al.* 2006, p. 204). There are a number of studies that consider this issue. Beck *et al.* (1988a) were among the first to attempt this type of analysis of non-audit services. Certain types of non-audit engagements are recurring and “represent a measure of the presence of enduring client specific investment on the part of the audit firm” (Hayes *et al.* 2006, p. 8). There is conflicting evidence with regard to which types of non-audit services cause concern.

On the one hand, it has been argued that recurring non-audit services generate a stream of future quasi-rents or an annuity that impacts on the economic bond between the auditor and the client. Beck *et al.* (1988a) propose that the incumbent auditor attempts to set the present value of audit and MAS fees (management advisory services fees, a type of non-audit services) sufficiently low to discourage potential competitors and prevent displacement. The present value of these future fees will be marginally below the sum of the present value of competitors’ costs and the auditee’s switching costs. This limit price scheme or strategy deters competition and ensures that the auditee does not have incentives to switch auditors. The combination of start-up and switching costs versus cost savings due to knowledge spillovers and the discount being passed on to the client indicates that the relation between audit fees and recurring non-audit fees will be negative (Beck *et al.* 1988a, p. 51). These arguments suggest that recurring non-audit services do not increase the level of economic bonding between auditor and auditee and do not present problems for auditor independence.

The situation is somewhat different for non-recurring services. The knowledge spillover from the joint provision of services provides the incumbent auditor with a potentially long-term cost advantage or monopoly that future competitors are unable to achieve with their normal

audit costs. Therefore, the incumbent auditor will charge the client a higher fee for the engagement and earn higher future profits. Using the limit price strategy, the auditor is aware that competitors may be able to win the engagement in any future period but due to the cost savings from the knowledge spillovers, the competitors' normal audit costs will be higher than those experienced by the incumbent auditor and so higher profits can be earned (Beck *et al.* 1988a, p. 51). As a result, there is a higher level of bonding associated with non-recurring non-audit services, and these services present a risk to auditor independence.

Despite the predictions in Beck *et al.* (1988a), Beck *et al.* (1988b) found that where clients purchased a high level of non-recurring management advisory services, then audit tenure was longer, and these services had a stronger relationship with tenure than recurring services. This result suggests that it is the non-recurring services that cause the independence problems, not the recurring services. Abdel-khalik (1990) points out, however, that the constraints relating to the availability of their data did not allow them to deal directly with the knowledge spillover issue. Thus there is mixed evidence on this issue.

Other studies have examined the effects of recurring and non-recurring non-audit services either by examining tenure using an approach similar to Beck *et al.* (1988b) or by more directly examining the relationship between audit and non-audit fees. DeBerg *et al.* (1991) find no evidence that either recurring or non-recurring services have a relationship with auditor independence; Abbott *et al.* (2004, p. 830) found that more effective governance was associated with lower fees for recurring non-audit services. Paterson and Valencia (2011) examine the effects on financial statement restatements of recurring and non-recurring instances of each type of non-audit services. They find that non-recurring tax and audit-related non-audit services pose a greater threat to independence than recurring tax and non-audit services.

The effects of nonaudit services continue to be topical and have been examined in many recent studies, in addition to those that consider the relationship between audit fees and non-audit fees, and those that examine the differing effects of recurring and non-recurring non-audit services. The results are very mixed, including studies that show beneficial effects, harmful effects, no effects and other effects. More specifically, recent studies by Huang *et al.* (2007), Lim and Tan (2008) and Robinson (2008) support the existence of beneficial knowledge spillovers. Joe and Vandervelde (2007) find that knowledge spillovers exist, but that they may have negative effects on scepticism as well as beneficial effects. Other studies show that auditors lose independence when they provide nonaudit services (Gul *et al.* 2007; Ye *et al.* 2011). There are also recent studies that find that required disclosure of nonaudit services fees leads to limiting nonaudit services purchased (Abbott *et al.* 2011); or that show that client firms avoid purchasing nonaudit services to protect the appearance of independence of their auditor (Zerni 2012). Finally there are other studies that show limited or no relationship between nonaudit services and measures of financial report quality (Ruddock *et al.* 2006; Habib and Islam 2007; Bloomfield and Shackman 2008; Callaghan *et al.* 2009). The mixed results of these recent studies show that this issue is still topical and needs further research, and that the issue of recurring versus non-recurring services has not been fully investigated.

3. Research Design

The inconsistent results of prior research may arise because the decision by companies to purchase non-audit services is driven by company size or other company characteristics and the level of audit fees are also driven by size or the other characteristics. If this is the case, then the results of previous studies may simply be an artefact of these differences. Simunic (1984, p. 693) found that purchasers of management advisory services have more complex corporate structures, are more diversified and invest more in difficult-to-audit assets such as

receivables and inventory, although in his study these differences were not significant. Abdelkhalik (1990, p. 319) also suggests that any differences may arise because firms in unusual circumstances may purchase both more auditing and more non-audit services and it is necessary to control for self-selection issues. It is therefore of interest to examine whether there are differences between companies that obtain either no non-audit services, those that obtain recurring non-audit services, or non-recurring non-audit services, or both recurring and non-recurring services together. The first research question is:

RQ1: Is there a difference between companies buying non-audit services (recurring, non-recurring or both) and those that do not buy non-audit services?

The next issue for investigation is the effect of recurring non-audit services, followed by the effect of non-recurring non-audit services. The previous mixed results make this an issue that is worthy of investigation. Prior research has provided predictions and results that are consistent with either form of non-audit services having a relationship with audit fees, and with a relationship in either direction. It may be the case that the recurring non-audit services are a source of independence issues, and that audit fees are lower when recurring non-audit services fees are higher. We directly examine fees as in the studies in Table 1, but with the advantage that we are able to consider recurring and non-recurring non-audit services separately. Because of the differing results and predictions in previous studies, we present a non-directional research question regarding recurring non-audit fees:

RQ2: Is there a relation between *recurring* non-audit fees and audit fees?

In a situation of non-recurring non-audit services, if knowledge spillovers reduce normal future costs for the incumbent auditor, then auditee-auditor bonding will be increased according to Beck (1988a). So, to the extent that auditor-auditee bonding is incremental due to non-recurring non-audit services, the level of audit fees will be affected. Again there are

reasons to expect that the relationship could be in either direction, which leads to the third research question:

RQ₃: Is there a relation between *non-recurring non-audit fees* and *audit fees*.

Data are obtained from the annual reports of New Zealand companies for the period 1995 to 2001. This period was chosen because it has the advantages that (1) the required disclosures were made in New Zealand, and (2) it was before recent auditing scandals, which may have influenced the behaviour of auditors and managers.

The dependent variables of interest are whether the firms purchased audit only, audit and recurring non-audit services (tax only), audit and non-recurring non-audit services (consulting only) or audit and all non-audit services (this includes tax, consulting and all other services). These were taken from the audit report (in which auditors are required to disclose any other services apart from the audit) and compared with the financial statement figures to confirm that they matched. There were initially 793 observations but 150 were deleted due to problems with missing data, outliers, unusual cases or mismatches between what was reported in the audit report and what was displayed in the financial statements.

In order to test the research questions, the non-audit services are categorized as either recurring or non-recurring. This classification was based on examination of the data. We found that companies that obtain tax services from their auditors usually do so on a recurring basis, with the majority of companies (61%) that buy tax services doing so in every year of the study, and 80% of those companies buying tax services in at least half of the years. In contrast, consulting does not tend to occur every year (38% of the companies buying these services bought them every year). Other services – internal audit, accounting, financial advice and ‘other’ (e.g., human resources or law) – recur even less and are more often once-only. For the purpose of this study, tax services were regarded as recurring and consulting and

similar services as non-recurring. This approach has the advantage that it does not require an assumption that the auditor knew at the time what the future pattern of recurring or non-recurring non-audit services would be.

It may be possible that client characteristics differ in their demand for audit fees depending on whether they purchase recurring or non-recurring non-audit fees or both types of services. For example, it is feasible that companies purchasing non-recurring non-audit services are bigger and pay lower audit fees. To examine Research Question 1, a multinomial logistic test of the relationship between the explanatory variables and the category of non-audit services purchased is conducted, and Mann-Whitney tests are performed to determine whether the groups of companies purchasing each category are different from each other.

The other two research questions are examined using regression. The regression model studies audit fees as a function of auditee size, complexity, risk and recurring or non-recurring non-audit fees. The model uses variables similar to those in previous studies. It is as follows:

$$\begin{aligned} \text{LNAUDITFEE} = & \beta_0 + \beta_1 \text{LNASSETS} + \beta_2 \text{INVREC} + \beta_3 \text{ROA} + \beta_4 \text{CA/CL} + \beta_5 \text{TD/TA} + \\ & \beta_6 \text{SQSUBS} + \beta_7 \text{NAS_recurring} + \beta_8 \text{NAS_non-recurring} + \\ & \beta_9 \text{NAS_both} + \varepsilon \end{aligned} \quad (1)$$

The dependent variable (LNAUDITFEE) in the model represents the natural log of total audit fees. The dollar amounts paid to the incumbent auditors for non-audit services were collected from published financial statements. NAS_recurring is the natural log of fees for companies receiving recurring non-audit services where the incumbent auditor provided audit and recurring (tax) services only. NAS_non-recurring is the natural log of fees for companies receiving non-recurring non-audit services, i.e., where the incumbent auditor provided audit and consulting services. The final variable, NAS_both is the natural log of fees for companies which purchase both recurring and non-recurring non-audit services. The natural

log was also used for these variables, consistent with Palmrose (1986) and Barkess and Simnett (1994). The other variables control for other factors that affect audit fees as discussed in Hay *et al.* (2006b).

Another issue is that mixed results are compounded by the issue of joint determination of audit fees and non-audit fees. Notably, Whisenant *et al.* (2003) and Hay *et al.* (2006a) found the audit fee measure was not significant when they tested their data further using a simultaneous equation model. Stein (2006) performed the same test on different data and found a positive and significant relation. However, Krishnan and Yu (2011) found a negative relation in their two-stage least squares model. We also investigate this issue by carrying out similar tests.

4. Results

The majority of the companies in the sample (82%) purchased some form of non-audit services from the incumbent auditor during this time. These results are similar to Barkess and Simnett (1994) who found, on average, 85% of Australian companies in their sample purchased other services from the incumbent auditor. These frequencies are also similar to Palmrose (1986) who looked at 298 companies where 87% purchased management advisory services from their auditor. She found that of the companies that purchased management advisory services, 44% purchased more than one type of non-audit service. Of the 82% of companies that purchased non-audit services during that time period, 25% (162 observations) purchased recurring non-audit services. Few of the non-audit services purchasers chose to procure non-recurring services (58 observations or 9%). The most common form of purchase (47% or 305 observations) was both recurring and non-recurring non-audit services.

INSERT TABLE 2 HERE

Table 2 provides descriptive statistics for the audit fees and non-audit fees on a yearly basis to allow comparisons regarding the proportion of non-audit fees to audit fees purchased by each category of companies. The average audit fees for companies purchasing audit only services display a rapidly decreasing trend from 1995 to 2001. This may not necessarily mean that these companies are paying less for audits but that they are moving from this group into one of the other groups as they may have purchased some non-audit services. It is also consistent with another New Zealand study by Hay and Knechel (2010), which showed overall audit fees were declining over the period 1993-2001, after deregulation to permit direct solicitation of potential audit clients.

The recurring services group saw a decrease in audit fees and a corresponding increase in non-audit fees. The ratio of non-audit fees to audit fees (NAF / AF) showed an increase over time to a point in 2001 where non-audit fees were greater than audit fees (120%). The non-recurring services group reflected an increase in audit fees up to 1997 and a gradual levelling off of the audit fees while the non-audit fees increased over time which is reflected in the ratio of non-audit fees to audit fees which reached a high of 143% in 1999. For those companies that purchased both recurring and non-recurring services there was a steady increase in both audit and non-audit fees although the proportional increase in non-audit fees was larger as revealed in the ratio of audit to non-audit services reaching a high of 160% in 2000. This was the period before recent scandals, and firms were not constrained by regulation or reputation effects from buying non-audit services from their auditors.

There were some companies that shifted from one group to another over the seven year period. On average, the number of companies purchasing audit only services fell during this period while those purchasing non-audit services increased. Companies purchasing audit only services dropped by 10 companies from 25 in 1995 to 15 from 1998 and remained at that

level until 2001. There was a steady increase in clients purchasing audit and recurring non-audit services which rose from 16 in 1995 to 28 in 2001. Although few in number, the companies purchasing audit and non-recurring non-audit services saw a slight gain from 6 in 1995 to 10 in 2001. The greatest increase in number of companies was experienced by those companies that purchased both types of non-audit services with an upsurge from 35 in 1995 to a high of 48 in 1999 but then a drop back down to 43 in 2001.

Panel B shows the year on year changes for companies that appear in two consecutive years. It is complicated to interpret this information due to the effects of companies entering and leaving the sample. However, the results show that there were tendencies during this period for small increases or decreases in audit fees, and large increases in non-audit fees.

4.1 Characteristics of Companies

The multinomial logistic regression reported in Table 3 examines the relationship of non-audit purchasers on audit fees between the explanatory variables and recurring or non-recurring non-audit services. The other variables are taken into account. The dependent variable is a categorical measure of whether the auditee purchased audit services only; recurring non-audit services only; non-recurring non-audit services only; or both categories of non-audit services. These results show that when all of the explanatory variables are considered together, it is size and the proportion of inventory and receivables that are significantly related to the choice to purchase more types of non-audit services.

INSERT TABLE 3 HERE

Table 4 reports the results of tests comparing groups using Mann-Whitney tests. The Mann-Whitney U test results indicate a statistical difference between the groups. The companies that purchase non-recurring services, in terms of statistical significance, are bigger, riskier,

more complex, have more inventory and accounts receivables and have higher audit and non-audit fees compared to the audit only companies. This is the same situation for purchasers of both types of non-audit services except for liquidity (CA/CL) which is not statistically significant. In terms of audit fees, non-audit fees and size, all categories of companies are statistically significantly different from each other except that purchasers of non-recurring services are no different from the purchasers of both recurring and non-recurring services. The implication of these differences is that any positive relationship found between audit fees and non-audit fees could be due to other differences between the companies, and not to auditor independence issues.

INSERT TABLE 4 HERE

4.2 *Correlations*

Table 5 shows the Pearson correlation coefficients for the dependent and independent variables. None of the correlations between the independent variables was higher than 0.7 so multicollinearity appeared unlikely to be a problem. We also conducted tests for multicollinearity.

INSERT TABLE 5 HERE

There was a strong, positive correlation between LNAUDITFEE and LNASSETS [$r = .743$, $n = 643$, $p < .000$], with high levels of audit fees associated with high levels of assets. This indicates that LNASSETS helps to explain nearly 55 per cent ($.743 \times .743$) of the variance in the LNAUDITFEES which confirms the need to control for company size in the multivariate tests. Two more variables showed strong significant correlations and the coefficient of determination for them was 21% for SQSUBS, and 17% for TD/TA. The rest of the variables have a very weak relationship with LNAUDITFEE.

For the variables of interest, NAS_recurring only had a weak, positive correlation with LNAUDITFEE [$r = .189$, $p < .000$]. This is very similar to that of NAS_non-recurring only [$r = .191$, $p < .000$] while NAS for both types of non-audit services has a stronger relationship [$r = .422$, $p < .000$].

4.3 Audit Fees and Recurring and Non-recurring Non-Audit Fees

The second research question in this study concerns the relationship between audit fees and recurring non-audit services and the third considers the relationship between audit fees and non-recurring non-audit fees. The results of the regression tests are reported in Table 6.

INSERT TABLE 6 HERE

All of the models have significant F-statistics and high adjusted R^2 's, ranging from 72% to 81% and all reach statistical significance ($\text{sig} = .000$), despite the relatively small number of observations in some cases. These compare well with earlier audit fee models based on non-audit fee variables. For example, Whisenant *et al.* (2003) report an adjusted R^2 of 82% based on 2,666 observations for 2000 to 2001 and Hay *et al.* (2006a) report an adjusted R^2 of greater than 77% based on between 130 and 169 observations for the period 1999 to 2001. The results indicate that the coefficients for nearly all of the control variables are statistically significant, $p\text{-value} < .05$ (two-tailed), and in the predicted direction.

Regarding the variables of interest, there are some variations in the coefficient results for the purchase of recurring non-audit variable over the seven years and for the pooled data using a fixed effects model. The results are not statistically significant for the period 1996 to 2000 while weakly significant and positive ($p\text{-value} < .05$; two-tailed) in 1995 and 2001. In sum, there is little evidence to reject the claim that there is no relation between recurring non-audit fees and audit fees, and any significant relationships are positive, consistent with previous

studies not suggesting threats to independence. We also report a pooled fixed effects model. The results are similar to the individual year models as far as the control variables are concerned. The pooled model shows a positive relationship between recurring non-audit services and audit fees; no significant relationship between non-recurring non-audit services and fees; and a positive relationship between both recurring and non-recurring non-audit services together and audit fees.

There is no statistical significance found for the non-recurring non-audit services variable. The evidence is not consistent with there being any relation between non-recurring non-audit fees and audit fees. This is a similar result to most of the previous research and does not support the view that auditors reduce their fees to attract non-recurring consulting work. Examining audit fees for companies that acquire both recurring and non-recurring non-audit services, the results reflect a positive and significant association with audit fees. The coefficients for this variable are significant and positive in all years but one (1997).²

A number of prior studies examine whether the results of OLS models results are made more complex by the issue of joint determination of audit fees and non-audit fees (e.g., Whisenant *et al.* 2003; Hay *et al.* 2006a). We performed a two-stage least squares regression using a similar model to Hay *et al.* (2006a).³ Consistent with other studies that consider this issue, there is no relationship between any of the categories of non-audit fee and audit fees when we

² The Variance Inflation Factors (VIFs) for all variables are below 10 and the tolerance values are all above .5 so multicollinearity is not a major impediment to interpreting the regression models. Other diagnostics consisting of eigenvalues and condition indices also suggest that multicollinearity is not a significant problem in the regression models. The fee model was examined for appropriateness of functional form, heteroskedasticity, influence of outliers, and collinearity. The outliers were checked by inspecting the Mahalanobi's distances. On comparing the 5% trimmed mean with the original mean the two means are found to be very similar (11.21 and 11.24). Given this, and the fact that the values are not too different from the remaining distribution, these cases were retained. Cook's Distance in the Residuals Statistics table indicates that there are cases with values larger than 1 indicating that there may be some unusual cases. The maximum value is 5.888 before the cases were investigated. There are a number of unusual cases and they seem to be having an undue influence on the results of the model as a whole. Once they are removed, the Cook's Distance maximum value drop from 1.290 to .099 which is below the cut off value of 1. The removal of these outliers does not have much of an impact on the results of the regressions. The statistical significance for the variables in the pooled data remain the same.

³ Lagged total assets were included as an instrumental variable (in addition to the variables reported in Table 6) in the first stage model.

use this approach. This adds further support to the conclusion of the paper that neither recurring nor non-recurring non-audit fees are associated with a reduction of audit fees.

4.4 Summary of results

We examine whether companies acquiring recurring non-audit services are significantly different from those acquiring non-recurring services. There are significant differences, in particular companies that acquire non-recurring services are significantly larger than those acquiring recurring services (and those not using any non-audit services). The next issue for examination was whether recurring non-audit services were related to audit fees. The relationship is positive, suggesting that there are no issues of independence being compromised. We then considered whether non-recurring non-audit services are related to audit fee. There are no significant relationships. In some cases companies acquire both recurring and non-recurring services, and the relationship between both types of service and audit fees is positive.

5. Discussion and Conclusion

The question regarding different characteristics of firms that purchase recurring and non-recurring non-audit services is based on Simunic's (1984) proposal that firms that purchase non-audit services from their auditors may differ systematically from those that do not. Tests for differences among groups in this study indicate that firms purchasing audit only services are significantly smaller and less complex than firms that purchase recurring non-audit services, or non-recurring non-audit services or both recurring and non-recurring non-audit services. Firms that purchase recurring non-audit services are smaller than those that purchase non-recurring services, and both of these groups are smaller than firms that purchase both recurring and non-recurring services together.

Previous studies have generally not been able to examine whether recurring and non-recurring non-audit services have differing effects on audit fees. This study has the advantage of being able to use New Zealand data that provides information about the different types of non-audit services, and the further advantage that the data is from a period before recent controversies that may have changed the behaviour of auditors and managers. We examine the extent to which services are recurring or not, and find that tax services are more likely to be recurring and consulting services more likely to be non-recurring. The fees paid for recurring non-audit services are significantly positively related to audit fees. In contrast, the results for the non-recurring non-audit services lack any statistical significance as no association is found between these non-audit services and audit fees for any of the years or the pooled data. This is consistent with most previous studies that have disaggregated the non-audit services and find no significant association between management consultancy (advisory) fees paid to incumbent auditors and the level of audit fees. The results relating to companies that purchase a combination of both recurring and non-recurring non-audit services are consistent with previous studies as the level of non-audit fees is significantly positively related to audit fees. These results all suggest that auditors do not reduce their audit fee and there is no reduction in bonding when types of non-audit services are purchased.

There are several limitations to this study. One limitation applies to our approach to identifying recurring and non-recurring services. Based on analysis of the data, we classify tax services as recurring and consulting services as non-recurring. This approach has the advantage that it does not require an assumption that the auditor knew at the time what the future pattern of recurring or non-recurring non-audit services would be. However, it has the limitation that is not a precise measure of whether the services were recurring or not. Further, there is no clear description of what work was performed when it is described as ‘consulting’, and it may include different types of service. The same issue also applies to the

categorisation of ‘taxation’ as there are many types of taxation services, with some of them potentially being non-recurring. The actual dollar amounts for each type of non-audit service for the firms that purchased both recurring and non-recurring non-audit fees, rather than only a total dollar amount, would also have helped to conduct useful analysis. Another limitation of the study is that the sample is limited to public companies. This restricts the use of these results for generalisations to be made about New Zealand audit market with regards to private companies, the public sector, and incorporated societies.

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Table 1: Summary of Prior Research Examining the Relationship between Audit Fees and Non-audit fees

Researchers	Date	Country	Period	Method	Data	Total non-audit fees	Recurring non-audit fees (Taxation)	Non-recurring non-audit fees (Consulting)
Simunic	1984	U.S.	1977	A		+		
Simon	1985	U.S.	1978-1983	F	\$	+		
Palmrose	1986	U.S.	1980-1981	F	\$	+	+	+
Abdel-Khalik	1990	U.S.	1986	Q	\$	NS		
Turpen	1990	U.S.	1982-1984	F	\$	+		
Barefield <i>et al.</i>	1993	U.S.	1983,1988	Q	D	NS	NS	NS
Davis <i>et al.</i>	1993	U.S.	NA	Q	\$	+	+	NS
O'Keefe <i>et al.</i>	1994	U.S.	1989	Q	R	NS	NS	NS
Ezzamel <i>et al.</i>	1996	U.K.	1992-1993	F	\$	+		
Firth	1997	Norway	1991-1992	F	\$	+		
Craswell	1999	Australia	1984,1987	F	R	NS		
Craswell & Francis	1999	Australia	1987	F	\$	+		
Ezzamel <i>et al.</i>	2002	U.K.	1995	F and Q	\$	+	+	+
Firth	2002	Internat.	1996	F	\$	NS		
Whisenant <i>et al.</i>	2003	U.S.	2001	F	\$	+(1)		
Hay <i>et al.</i>	2006	N.Z.	1999-2001	F	\$	+(1)		
Stein	2006	U.S.	2001	F	\$	+(2)		
Donohoe & Knechel	2009	U.S.	2003-2007	F	\$(3)		—	
Krishnan & Yu	2011	U.S.	2000-2006	F	\$	-(2)		
Fleischer & Goettsche	2012	Germany	2005-2009	F	\$(4)	+(2)		

(1) The Log of non-audit fees is not significant in the simultaneous equation model.

(2) The Log of non-audit fees is significant in the simultaneous model.

(3) For tax-aggressive firms using an industry specialist auditor

(4) For Big Four firms only

Q = questionnaires or surveys; F = Published Financial Statements; D = dummy variable which takes the value of one if non-audit service provided, and zero otherwise. \$ = the actual dollar (or other currency) amounts or log of the amounts for the non-audit service was used; A = Analytical; R = ratio of NAF to AF.

Table 2: Descriptive Statistics

Panel A: Audit and non-audit fees by category, by year and as a ratio.

Year		NON-AUDIT SERVICES Category												
		AUDIT ONLY	RECURRING-TAX ONLY			NON-RECURRING - CONSULTING ONLY			BOTH - TAX AND CONSULTING			ALL COMPANIES		
			AF \$000	AF \$000	NAF \$000	NAF/AF	AF \$000	NAF \$000	NAF/AF	AF \$000	NAF \$000	NAF/AF	AF \$000	NAF \$000
1995	Mean	88.673	150.510	105.589	70.2%	162.613	158.166	97.3%	186.152	101.203	54.4%	147.756	108.430	73.4%
	N	25	16	16		6	6		35	35		82	57	
1996	Mean	49.604	103.458	51.230	49.5%	182.15	72.911	40.0%	186.655	174.688	93.6%	140.556	125.235	89.1%
	N	18	23	23		10	10		45	45		96	78	
1997	Mean	53.534	99.752	58.914	59.1%	233.500	186.625	79.9%	164.960	174.562	105.8%	133.480	137.299	102.9%
	N	16	25	25		8	8		42	42		91	75	
1998	Mean	56.247	127.814	84.723	66.3%	178.316	147.495	82.7%	207.513	263.728	127.1%	161.616	199.165	123.2%
	N	15	22	22		10	10		47	47		94	79	
1999	Mean	57.587	133.400	95.209	71.4%	148.400	213.000	143.5%	192.737	185.671	96.3%	154.557	161.846	104.7%
	N	14	21	21		5	5		48	48		88	74	
2000	Mean	51.764	82.221	83.379	101.4%	166.555	200.555	120.4%	221.227	355.509	160.7%	150.527	247.582	164.5%
	N	15	27	27		9	9		45	45		96	81	
2001	Mean	38.912	88.489	106.788	120.7%	182.600	168.200	92.1%	210.840	304.500	144.4%	145.349	219.328	150.9%
	N	15	28	28		10	10		43	43		96	81	
Total Mean		59.121	108.595	82.995		181.299	158.587		196.292	226.667		147.672	174.813	1.184
N		118	162	162		58	58		305	305		643	525	

Panel B: Summary of year on year changes

Year	Total audit fees for companies with observations in both current and prior years		Percentage change from previous year	Total non-audit fees for companies with observations in both current and prior years		Percentage change from previous year
	Prior	Current		Prior	Current	
1996	11,517.09	11,297.86	-1.90%	7,040.557	9,030.788	28.27%
1997	16,124.58	17,347.21	7.58%	18,218.72	18,165.25	-0.29%
1998	17,262.22	19,319.09	11.92%	18,445.21	24,398.36	32.27%
1999	20,593.40	21,419.46	4.01%	25,047.51	27,415.38	9.45%
2000	13,659.65	13,280.17	-2.78%	18,316.87	19,524.63	6.59%
2001	14,331.67	15,541.80	8.44%	20,169.60	22,877.78	13.43%

Table 3: Multinomial logit tests of relationship between explanatory variables and category of non-audit services purchased

Independent Variables	Likelihood Ratio Tests		R-squared
	Chi-Square	df	Sig.
INTERCEPT	86.144	3	.000
LNASSETS	75.257	3	.000
INVREC	12.731	3	.005
ROA	2.764	3	.429
CA/CL	.304	3	.959
TD/TA	1.200	3	.753
SQSUBS	1.451	3	.694
Overall model:			
Likelihood ratio test	123.229	18	.000
Pseudo R-Square:			
Cox and Snell			.168
Nagelkerke			.184
McFadden			.074

Dependent variable: categorical measure of service purchased, namely audit only; recurring non-audit services only; non-recurring non-audit services only; and both categories of non-audit services.

LNASSETS = the natural log of total assets; INVREC = Inventory plus receivables divided by total assets; ROA = Return on assets (EBIT divided by total assets); CA/CL = the current ratio; TD/TA = total liabilities divided by assets; SQSUBS = the square root of the number of subsidiaries.

Table 4: Mann-Whitney Test U (Non-parametric test)

Independent Variables	Audit vs. Recurring (Sig.)	Audit vs. Non-recurring (Sig.)	Audit vs. Both (Sig.)	Recurring vs. Non-recurring (Sig.)	Recurring vs. Both (Sig.)	Non-recurring vs. Both (Sig.)
LNAUDITFEE	-5.117 (.000)***	-6.908 (.000)***	-8.441 (.000)***	-4.182 (.000)***	-3.717 (.000)***	-2.380 (.017)
LNASSETS	-4.870 (.000)***	-7.016 (.000)***	-7.377 (.000)***	-5.185 (.000)***	-2.927 (.003)***	-3.507 (.000)***
INVREC	-2.535 (.011)	-3.151 (.002)***	-3.481 (.001)***	-1.212 (.226)	-.473 (.636)	-1.182 (.237)
ROA	-2.136 (.033)	-3.245 (.001)***	-4.535 (.000)***	-1.803 (.071)	-2.352 (.019)	-.184 (.854)
TD/TA	-2.069 (.039)	-3.664 (.001)***	-3.019 (.003)***	-2.390 (.017)	-.556 (.578)	-2.490 (.013)
CA/CL	-1.601 (.109)	-2.634 (.008)***	-2.383 (.017)	-1.601 (.109)	-.604 (.546)	-1.271 (.204)
SQSUBS	-1.619 (.105)	-3.208 (.001)***	-4.612 (.000)***	-1.344 (.179)	-2.180 (.029)	-.010 (.992)
IntotalNAF	-5.117 (.000)***	-6.969 (.000)***	-8.441 (.000)***	-4.259 (.000)***	-3.717 (.000)***	-2.522 (.012)

LNASSETS = The natural log of total assets; INVREC = Inventory plus receivables divided by total assets; ROA = Return on assets (EBIT divided by total assets); CA/CL = The current ratio; TD/TA = total liabilities divided by assets; SQSUBS = the square root of the number of subsidiaries; IntotalNAF= the natural log of fees for non-audit services

Table 5
Pearson Correlations between Audit Fees and Non-Audit Fees

	LNASSETS	INVREC	ROA	TD/TA	CA/CL	SQSUBS	NAS_recurring	NAS_non-recurring	NAS_both
LNAUDITFEE	.743(**)	.281(**)	.174(**)	.410(**)	-.236(**)	.457(**)	.189(**)	.191(**)	.422(**)
LNASSETS		-.125(**)	.241(**)	.280(**)	-.211(**)	.366(**)	.140(**)	.203(**)	.449(**)
INVREC			.230(**)	.260(**)	-.121(**)	-.032	.033	.096(**)	-.113(**)
ROA				.033	-.160(**)	-.022	-.028	.045	.079(*)
TD/TA					-.345(**)	.191(**)	.104(**)	.081(*)	.141(**)
CA/CL						-.125(**)	-.041	-.038	-.052
SQSUBS							.052	.045	.166(**)
NAS_tax_only								-.048	-.079(*)
NAS_consulting__only									-.063

N = 643

** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).

LNAUDITFEE = Natural log of Audit fees; LNASSETS = Natural log of Total Assets ; INVREC = Inventory plus receivables divided by total assets; ROA = Return on assets (EBIT divided by total assets); TD/TA = total liabilities divided by assets; CA/CL = The current ratio; SQSUB = square root of the number of subsidiaries; NAS_tax only = audit and tax services provided; NAS_consulting only = audit and consulting services provided; NAS_both = audit and both tax and consulting services provided.

Table 6: OLS Regression Models of Audit Fees, Non-audit Fees and Control Variables

$$\text{Ln(AF)} = a + b_1\text{LNASSETS} + b_2\text{INVREC} + b_3\text{ROA} + b_4\text{CA/CL} + b_5\text{Liabstas} + b_6\text{SQSUBS} + b_7\text{NAS_recurring} + b_8\text{NAS_non-recurring} + b_9\text{NAS_both} + e$$

Independent Variables	1995 Coeff (Sig.)	1996 Coeff (Sig.)	1997 Coeff (Sig.)	1998 Coeff (Sig.)	1999 Coeff (Sig.)	2000 Coeff (Sig.)	2001 Coeff (Sig.)	Pooled Coeff. (Sig.)
Intercept	1.811 (.074)*	1.935 (.056)*	1.628 (.107)	2.212 (.030)**	1.946 (.055)*	2.657 (.009)***	5.170 (.000)***	1.404 (.000)***
LNASSETS	.582 (.000)***	.604 (.000)***	.650 (.000)***	.617 (.000)***	.578 (.000)***	.637 (.000)***	.600 (.000)***	.481 (.000)***
INVREC	.340 (.000)***	.383 (.000)***	.422 (.000)***	.401 (.000)***	.397 (.000)***	.401 (.000)***	.368 (.000)***	1.868 (.000)***
ROA	-.021 (.718)	-.037 (.481)	-.052 (.388)	-.048 (.355)	-.061 (.326)	-.125 (.052)*	-.139 (.025)**	-.625 (.000)***
TD/TA	.091 (.144)	.119 (.026)**	.052 (.426)	.084 (.143)	.061 (.382)	.015 (.812)	.042 (.538)	.378 (.001)***
CA/CL	.029 (.626)	.029 (.565)	-.061 (.329)	.000 (.999)	.021 (.754)	-.080 (.185)	-.029 (.625)	-.002 (.077)*
SQSUBS	.299 (.000)***	.259 (.000)***	.224 (.000)***	.183 (.001)***	.202 (.003)***	.108 (.074)*	.066 (.249)	.117 (.000)***
NAS_recurring	.119 (.033)**	.097 (.065)*	.081 (.129)	.074 (.151)	.090 (.164)	.052 (.354)	.112 (.035)**	.002 (.000)***
NAS_non-recurring	.011 (.844)	.033 (.510)	.044 (.435)	.042 (.413)	.007 (.908)	.028 (.630)	.083 (.138)	.001 (.266)
NAS_both	.147 (.015)**	.187 (.002)***	.083 (.154)	.117 (.041)**	.179 (.016)**	.224 (.002)***	.306 (.000)***	.002 (.000)***
Adj. R ²	.812	.806	.788	.812	.717	.753	.790	
F-Stats	34***	39***	33***	40***	22***	29***	36***	
Log likelihood ratio test Sig.	.000	.000	.000	.000	.000	.000	.000	
No. of obs.	82	96	91	94	88	96	96	543

Notes: (Sig.) *, **, *** Significant at $p <= 0.10, 0.05, 0.01$ (two-tailed test).

The pooled regression used a fixed effects model.

LnAF = The natural log of total audit fees; LNASSETS = The natural log of total assets; INVREC = Inventory plus receivables divided by total assets; ROA = Return on assets (EBIT divided by total assets); CA/CL = The current ratio; TD/TA = total liabilities divided by assets; SQSUBS = the square root of the number of subsidiaries; NAS_tax_only = the natural log of non-audit services for companies buying tax services only; NAS_consulting_only = the natural log of non-audit services for companies buying consulting services only; NAS_both = the natural log of non-audit services for companies buying tax services and consulting services.