

Non-audit Fees and Auditor Independence: Supply Side Considerations

Initial audit fee discounting and the supply of NAS

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Abstract

The joint provision of audit and non-audit services remains a contentious issue for the regulators, legislators and the auditing profession to date. In the past two decades, audit research has examined whether the joint provision of audit and non-audit services impairs auditor independence. However, empirical evidence on non-audit services and auditor independence has remained mixed and inconclusive.

This paper seeks to contribute to debate on the joint supply of audit and non-audit services by empirically investigating the supply side of the market for non-audit services. In particular, a model for the supply side of the market for non-audit services is developed and empirically tested. A supply side focus can be potentially informative because the reason why auditors supply non-audit services to their audit clients can have important implications for the independence of the auditor.

An ordinary least squares regression model is used to model the supply side of the market for non-audit services. In addition, a panel dataset is used. The data relates to a sample of the companies listed on the Australian Securities Exchange from the year 2000 to 2010. The results of this study indicate that auditors supply non-audit services to audit clients for efficiency rather than opportunistic reasons. This study provides regulators and legislators in Australia with important insights into the supply of non-audit services by incumbent auditors to their audit clients.

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1. Introduction

The supply of non-audit services by incumbent auditors has attracted significant attention from the regulators, academic community, and the public at large within the last decade. It is also an important issue for the accounting profession and corporate management. The regulators and legislators see the provision of non-audit services by incumbent auditors as a potential threat to independence (United States Congress 1977; Securities and Exchange Commission 1994, 2000; Panel on Audit Effectiveness 2000). The accounting profession sees non-audit services as a growing source of revenue stream (Hillison and Kennelley 1988; Houghton and Ikin 2001). The accounting profession and the regulators are at cross roads because of these differing views. In certain jurisdictions, regulators have introduced legislations restricting or banning auditors from supplying non-audit services to their audit clients, while in other jurisdictions legislations have been enacted that require corporations to publicly disclose the amount and type of non-audit services procured from the auditors.

This study examines the supply side of the market for non-audit services. The main objective is to investigate the reasons why an auditor supplies non-audit services to its audit clients. It is hypothesized that auditors supply non-audit services for three distinct reasons, first to respond to the needs of its clients. Audit clients may need a wide range of services such as taxation advice, accounting information system design and implementation, internal audit and accounting advice in addition to financial statement audit. In many cases, the auditor is the preferred choice for the supply of these additional services as the client has easy access and the quality and efficiency of the supplier is already verified. This also reduces the searching and related costs for the client. Another reason an auditor may supply non-audit services to its audit client is because they have the requisite knowledge and technical capabilities. The auditor may also have a better understanding of the clients business and internal systems and this helps in the provision of non-audit services. Knowledge spillover is the general term used to describe such knowledge transfers.

Finally, it is hypothesized that an auditor may be willing to supply non-audit services to its audit clients to recover low-balled audit fees. Audit fee low-balling occurs where an audit firm sets its initial year audit fee below the cost of conducting the audit. In a competitive market, auditors

have to bid for the provision of audit services. Auditors also know that once they get the contract to provide audit services, they will have a competitive advantage in bidding for non-audit work required by the client. This competitive advantage arises as the auditor has a better understanding of the clients business and internal systems, is a verified supplier to the client and can bid a competitive price for non-audit services due to knowledge spillovers from audit to non-audit work. Non-audit services are also more lucrative in terms of profits margins compared to audit services (Hillison and Kennelley 1988). Prior research provides evidence of audit fee low-balling (Francis and Simon 1987; Simon and Francis 1988; Turpen 1990; Ettredge and Greenberg 1990). These studies, however, assume that auditors will only low-ball in their first year and that audit fees will normalize in subsequent periods. In this study, we predict that auditors will continue to low-ball after the initial year to maintain an audit client in subsequent periods and this will be cross subsidized by profits from non-audit work. Apart from low-balling where the auditor sets the fee below cost, we are also interested in all cases where audit fee is cross subsidized by non-audit profits. In fact, audit firms may not set the fee below cost but below normal levels of gross margins given the competitive pressures in the audit market. This practice is as problematic as the case where audit fee is set below cost.

The motivations to investigate the supply side of the market for non-audit services are numerous. Regulators and legislators on one hand have imposed legislations on the supply of non-audit services. In certain jurisdictions such as the U.S. certain types of non-audit services are banned from being supplied by the auditor while in other jurisdictions such as Australia, U.K. and the E.U. member countries public disclosure of non-audit fees are required and prior approvals have to be sought from audit committees for the procurement of non-audit services from the auditor. These regulations have been imposed amidst mixed results from studies conducted on the impact of non-audit services on auditor independence.

The majority of the research on non-audit services has concentrated on the demand side, that is, reasons why clients purchase non-audit services from the auditors. Thus, there is a lacuna in the literature on the supply side of the market for non-audit services. The supply side of the market for non-audit services is equally, if not more, important. The insights from the supply side of the market for non-audit services are potentially informative to regulators and legislators.

In the next section, a review of relevant literature and related hypothesis are presented. The literature review and hypothesis section is followed by an outline of the methods that will be employed to analyse the data and test the hypotheses. The final section presents the results and a discussion of the results followed by the conclusions reached.

2. Literature review and hypothesis development

In this study, we outline the factors that may affect the supply of non-audit services by auditors and empirically test these factors by developing a model for the supply side of the market for non-audit services.

In a service provider-client relationship, it is very important for the supplier of the services to be able to meet the needs of its clients. An audit firm purports to be a supplier of a wide range of services in addition to audit. In an economy that we operate in, clients have an increasing need for consultancy services. The effects of a globalised world and ever-increasing complexity of businesses drive the demand for a wide range of consultancy services. Thus, an auditor may supply non-audit services to its audit client because the client needs the services and prefers to procure these services from the auditor.

In addition to satisfying the client's needs, an audit firm may supply non-audit services to broaden its revenue base and to maintain a steady growth of the practice. This is even more important at a time when the saturation of the audit market means audit services may not contribute significantly to growth of the audit firm. On the same note, audit firms may low-ball audit fee to get their foot into the door. In the case where the audit has been a loss leader, the auditor may supply non-audit services to recover the losses.

The knowledge base that an audit firm possesses together with the technical capabilities may also influence the supply of non-audit services. The knowledge base and capabilities may be client specific, industry specific or general. If an audit firm does not possess the required expertise and the capability to provide the required non-audit services then it will not be able to supply these

services to its audit clients. This is, as a result, an important determinant of non-audit service supply.

We have identified three distinct reasons why an auditor may supply non-audit services to its audit clients. The reason why an auditor supplies non-audit services is important, as it will have implications on the independence of the auditor. If the auditor supplies non-audit services to maintain a steady growth of the firm or to recover low-balled audit fee, this may have negative implications for the independence of the auditor. An audit firm that low-balled audit fee to get its foot into the door may expect to recover the low-balled audit fee from subsequent non-audit service engagements and this may lead the auditor to be more lenient towards the audit client just to maintain the auditor-client relationship. This reason for the supply of non-audit services is also opportunistic, as the auditor sees the provision of non-audit services as an opportunity to recover low-balled audit fees.

On the other hand, if the auditor supplies non-audit services to its audit clients because it possesses the requisite knowledge, capabilities, and technical competence then it is economically efficient. In many cases, an auditor may have better knowledge of the client's needs and business and is able to provide better services at lower costs compared to other suppliers. This may be a result of knowledge spillovers. The size of the auditor may also influence the ability of the auditor to supply non-audit services. For example, a Big 4 auditor has access to more resources, is able to attract personnel that are more capable, and has the advantage of a global presence compared to a small local accounting firm and therefore, should be able to supply more non-audit services.

The regulators and legislators use the economic bonding (and low-balling) and self-review threats as the basis for the restrictions on non-audit services. The profession, on the other hand, argues that non-audit services does not impair their independence but enables them to perform an efficient and effective audit. As outlined in the preceding paragraphs, auditor supply non-audit services for three distinct reasons. The supply of non-audit services to recover low-balled audit fees or to maintain growth of the practice supports the regulators and legislators arguments for legislation. The technical competence, capability and knowledge of the auditor as explanations

for the supply of non-audit services support the professions position on the issue of joint audit and non-audit supply. Modelling the supply side of the market for non-audit services provides empirical evidence that will assist both the legislators and the profession understand each other's position, and most certainly bring some closure to the debate. We now explore these factors and issues in detail in the next subsection, which will lead on to the hypotheses.

2.1. Supply of non-audit services and audit fee low-balling

In this section, we present arguments that lead to the first hypothesis. As outlined in the preceding section, auditors who low-ball audit fees are expected to have a higher propensity to supply non-audit services. Anecdotal evidence also suggests that firms lower the audit fee to accept clients to whom they could sell more lucrative non-audit services in the future. This is even more important at a time when the audit market is getting saturated. The public accounting firms see non-audit services as an important alternative source of revenue (Hillison and Kennelley 1988). Audit services are seen as a 'foot in the door', which will lead to lucrative non-audit service contracts. It is also important to note that the magnitude of fee disclosed for non-audit services may not accurately indicate the importance of it to accounting firms. A more authentic but unobservable variable to study is the margins on audit and non-audit services.

We begin our arguments by reviewing studies that have been conducted to-date on audit fee low-balling. These studies are reviewed in the next subsection. The results of these studies are important because if audit fees are not low-balled then a study on the impact of low-balling on supply of non-audit services is not warranted at all.

2.1.1. Audit fee low-balling

As outlined in the preceding section, auditors may low-ball audit fees to get a foot in the door. It involves reducing fees below the cost of providing the audit services. This reduction in fees may lead to reduced audit work, which has the potential of impairing audit quality. Past research also explores the possibility of audit firms recovering low-balled audit fees through the provision of more lucrative non-audit services. This again leads to issues associated with auditor independence. If audit firms low-ball and recover the low-balled audit fee through the provision

of non-audit services they may become too lenient towards the client for the fear of losing the client and with it the audit and more importantly the non-audit fees.

DeAngelo (1981) proposed that auditors are likely to earn quasi rents from audit clients in subsequent years. This quasi rent according to DeAngelo (1981) accrues to the auditor because of start-up costs associated with the appointment of a new auditor. Initial year audits usually require more work and this means that the costs for initial year audits are high. If the auditor does not charge a higher fee for the initial audit then the auditor may be viewing these additional costs as an investment and may be expecting future return on this investment. This is the reason why regulators see audit fee low-balling as problematic. If the auditor sees initial year discounts as an investment and expect a return on this in the future, then it is in the interest of the auditor to maintain the auditor-client relationship. In order to maintain this relationship an auditor may be lenient with the client and go along with the client when it comes to negotiations on conflicts regarding financial statements. Dye (1991) provides analytical support for DeAngelo's (1981) original conclusion that low-balling will be observed in audit pricing. However, Dye (1991) also states that public disclosure of audit fees will lead to an elimination of low-balling of audit fees.

It is impossible to evaluate audit fee low-balling because actual audit cost is not public information. Thus, many prior studies use audit fee discounting by a new auditor as an indication that audit fee is low-balled. The literature on pricing of initial audits in U.S. capital markets suggest that initial audits are discounted (Francis and Simon 1987; Simon and Francis 1988; Turpen 1990; Ettredge and Greenberg 1990).

Francis and Simon (1987) document that initial audit engagements are priced significantly lower than continuing audit engagements. Another study conducted by Simon and Francis (1988) documents that audit fees are discounted in the initial year. Their results show that price reductions of 24 percent for the initial year audit and 15 percent for the next two years exist in the U.S. audit market for the years 1979 to 1984. Turpen (1990) also reports initial year fee discounting using data from 1982 to 1984 for U.S. companies. Further analysis by Turpen (1990) reveals that fee discounting is prevalent for Big 4 as well as smaller-sized accounting firms.

Ettredge and Greenberg (1990) also find that the fees for initial audits on average are 25 percent lower compared to continuing audits. Their sample consisted of 389 firms for the period 1983 to 1987. Ettredge and Greenberg (1990) also provide evidence that fee discounting is significantly explained by a change in the auditors relative costs advantages, change in auditor class (Big 4 to non-Big 4), competition in bidding and change in auditor industry or situational expertise.

Schatzberg (1994) develops a theoretical model of audit fee low-balling and tests this model using an experimental design. The results show that audit fees were being low-balled. Sellers set the fee for year one audit below the year one costs. In some cases, excessive low-balling was also documented. In another study, Schatzberg and Sevcik (1994) developed and tested a multi-period model for low-balling. The results reported in this study are similar to that reported in Schatzberg (1994). This study also provides evidence on auditor independence. The results show that sellers deviate from truthful reporting (in the presence of low-balling) when the future profits, from continuing as auditor is greater than the cost of misreporting. Elitzur and Falk (1996) provide further evidence on audit fee low-balling using an experimental market setting. The results are consistent with results reported by earlier experimental studies on low-balling.

Most of the studies conducted on audit fee low-balling use data gathered through surveys or use an experiment in a laboratory setting. Only a few studies use data that became available through the public disclosure requirement of the Accounting Series Release 250 from 1979 to 1981 in the U.S. Unlike the U.S., audit fee data was a required disclosure in Australia, as a result, a number of studies use publicly disclosed Australian data to test if audit fee low-balling occurs.

Butterworth and Houghton (1995) investigate audit pricing in the event of a change in auditor using Australian data. The study is motivated by the lack of empirical studies on audit fee low-balling in Australia. Results show that new auditors do not charge a significantly lower price than the incumbent auditors do. They also report that an auditor change leads to a higher amount of total fees paid to the auditor (both audit and non-audit fees included). These findings are inconsistent with what is reported by a number of U.S. based studies. One major limitation of this study is that data used relates only to firms from Western Australia.

Craswell and Francis (1999) suggest that initial year audit fee discounting may be due to the non-disclosure of audit fee publicly and suggest that after the requirement that audit fee be publicly disclose in the U.S. these initial year discounts should disappear. Craswell and Francis also provide evidence by using Australian data that audit fee discounting is non-existent in an environment where public disclosures of audit fee are mandatory. Thus, the results reported by Butterworth and Houghton (1995) and Craswell and Francis (1999) provide support for Dye's (1991) proposition that fee discounting will not occur where audit fees are publicly disclosed.

On the other hand, Sankaraguruswamy and Whisenant (2005) and Ghosh and Lustgarten (2006) provide evidence that initial year fee discounting is still present in an environment where public disclosure of audit fee was required. These results are more consistent with the arguments advanced by DeAngelo (1981) that audit fee low-balling will occur in all market settings. Sankaraguruswamy and Whisenant (2005) provide further evidence, which shows that investors do not perceive earnings quality to be affected by initial audit discounting.

In a more recent study, Huang et al. (2009) examines if regulatory interventions into the audit market through SOX leads to a change in the initial audit low-balling. They hypothesize that audit fee low-balling will be less likely in the post-SOX environment compared to the pre-SOX period. Their results show that low-balling existed in the pre-SOX period but post-SOX, the low-balling disappeared and fee premiums were charged for initial audits. This means that post-SOX concerns of audit fee low-balling are not warranted but more recently, Orlik (2011) reports that small audit firms are concerned about audit fee low-balling by the Big 4 audit firms. In a number of cases, small audit firms claim to have missed audit tenders because the Big 4 firms undercut them on price. If this is the case then the issues with audit fee low-balling may still be a matter of concern for regulators and legislators in post-SOX environment.

In summary, the results on audit fee low-balling show that audit fees are low-balled in all market settings. In some cases, audit fees are low-balled for four years before fees return to normal levels. It is also important to note that audit fee low-balling studies have only been conducted in developed and highly efficient markets.

In the next subsection, we consider the relationship between audit fee low-balling and non-audit services. As alluded to earlier, non-audit services are considered more profitable than audit. Accounting firms also see non-audit services as an important source of revenue especially at a time when the audit market is highly competitive and saturated.

2.1.2. Audit fee low-balling and non-audit services

Prior studies have examined the relation between non-audit services and audit pricing. Simunic's (1980) paper is a seminal work in this area. Simunic (1980) reports that firms purchasing non-audit services from the auditor, reported higher audit fees. They take the positive association between audit and non-audit services to be indicative of knowledge spillovers rather than low-balling. Simon (1985) also reports a positive relation between audit and non-audit fees. Palmrose (1986) examines the impact of different types of non-audit services on audit pricing. The results show that audit and non-audit fees are positively related. This result is the strongest for accounting related non-audit services but the relation also stands for non-accounting related non-audit services.

In another study, Ezzamel et al. (1996) examine the relation between audit and non-audit services using data from the U.K. They report that income earned by audit firms from non-audit services averaged 90% of the audit fees for the years 1992 and 1993. Their results also show that audit and non-audit fees are positively related. This result is consistent with the results of earlier studies on this issue. Firth (1997) also reports a positive relation between audit and non-audit fees using firms from Norway. Although, the results support earlier studies, Firth (1997) states that there is no plausible reason for the positive relation in the context of Norway.

Dunmore and Shao (2006) investigate whether audit fees are subsidized by profits from non-audit services using a sample of firms from New Zealand. They employed non-audit fees as a test variable in their audit fees model and found that cross subsidization was not significant.

On the contrary, Lai and Yim (2002) report that when the Big 4 audit firms supplied more non-audit services they were more likely to charge lower audit fees. This is the only study that provides evidence that non-audit services negatively affect audit pricing. However, they also

report that this does not affect auditor independence, as they do not find any relation between non-audit services and audit opinions.

In summary, studies examining the effect of non-audit services on audit pricing fail to find evidence that non-audit services lead to audit fee low-balling except Lai and Yim (2002). While these studies examined the effect of non-audit services on audit pricing, this study examines the effect of low-balled audit fees (and other factors) on the supply of non-audit services. We postulate that, in the case where an audit firm has low-balled audit fees, the firms' propensity to supply non-audit services will be higher. In a competitive market, an auditor bidding for the supply of audit work would factor in profits expected from non-audit work that are tied to the audit work. This is, in the sense that the incumbent auditor will have an advantage over other firms in getting the bid to provide such non-audit work.

The advantage that the auditor will have in bidding for the non-audit work is those arising from production economies where the incumbent auditor can slightly undercut its competitor and still capture much of the benefits. Furthermore, many clients simply call in their auditors to provide the non-audit work rather than putting it on tenders. We posit that the incumbent auditors expect that they can capture economic rents from the provision of non-audit services if they can retain the audit engagement. Thus, the lower they bid for the audit work the higher their willingness to supply non-audit work to recover the low-balled audit fees. Given these arguments, we frame our first hypothesis in the alternative form:

Hypothesis 1: Auditors that low-ball audit fees supply higher amounts of non-audit services.

2.2. Knowledge, technical capability and the supply of non-audit services

This study further argues that an auditor who has better expertise in the provision of non-audit services and is technically more competent will be willing to supply more non-audit services to its clients. We use two measures of knowledge, expertise, and technical competence. These measures include auditor tenure and auditor size.

An auditor may gain better understanding of the clients systems and processes over time. Thus, the length of the auditor client relationship is a variable that can proxy for knowledge spillover. This enables the auditor to perform the non-audit services required much more effectively and efficiently.

The size of the auditor is another variable that can proxy for knowledge and technical capability of the auditor. Big 4 auditors have access to resources and training that non-Big 4 don't. They also have access to or have the ability to hire the best personnel and retain them compared to the non-Big 4 auditors. The Big 4 also has a global presence and the ability to transfer capability to regions and countries where certain capabilities may be lacking.

2.2.1. Auditor Tenure

Several studies provide evidence that the contracting costs decrease and knowledge spillovers increase as the duration of business relationships increase (Ghosh et al. 2006). Studies also show that communication and collaboration between parties to a contract improves as the tenure of their relationship increases (Levinthal and Fichman 1988 and Asanuma 1989). Various other studies indicate that as the length of a strategic partnership/alliance increase, the contracting costs between the parties decrease, the trust between the parties' increases, and disputes become easier to resolve (Gulati and Singh 1998; Larson 1992; Ring and Van de Ven 1994).

The longer the auditor serves a client the more familiar he/she becomes with the client and the greater the knowledge he/she accumulates regarding the client. Therefore, the auditor becomes more efficient in serving the client as tenure increases. This particular factor works through knowledge spillovers. Knowledge spillover can be described as a situation where knowledge from one task can be transferred to another task. Knowledge spillovers increase as duration of a business relationship increases. Experimental Studies in auditing has found that auditor expertise increases with experience (Libby and Fredrick 1990; Ashton 1991). Furthermore, archival studies (see for example Johnson et al. 2002; Myers et al. 2003; Ghosh and Moon 2005) find that audit quality improves with lengthened auditor-client relationship. Myers et al. (2003) and Ghosh and Moon (2005) attribute this improvement to client specific expertise developed by the incumbent auditor. Such client specific expertise is likely to result in knowledge spillovers for

non-audit services. Therefore, we can predict a positive association between auditor tenure and supply of non-audit services. This thesis argues that the longer the tenure of the auditor the more knowledge he has in regards to the client and therefore the higher the auditor's willingness to supply non-audit services to the client.

Gul et al. (2007) in a study using U.S. data find that non-audit services fees affect auditor independence when the auditor tenure is short. They hypothesize that threats to independence is greatest in the initials years of auditors tenure as the recently acquired quasi rents of incumbency makes auditors more vulnerable to client pressure or dismissal in earlier years of auditor client relationship. In addition, a new auditor is also not very familiar with the clients accounting system and firm characteristics (Gul et.al. 2007) which lead to lower quality audits. Myers et al. (2003) also documents lower quality audits when tenure of the auditor is short. The auditor receives incentives in terms of quasi rents or reputation building from an audit apart from fees. It is hypothesized that a longer serving auditor will be more inclined towards building reputation than earning quasi rents, which are a threat to independence, and reputation. These arguments are in a different direction from what has been advanced by regulators. Regulators have been promoting mandatory auditor rotation as a means of protecting independence. Their arguments have been based on the notions of client familiarity and personal connection between auditor and client firms. Rotational tenure was seen as a mechanism to minimize these threats. The results reported by Gul et al. (2007) indicate that the effect of non-audit services fee on auditors' independence is contingent upon the auditors' tenure.

Geiger and Raghunandan (2002) in a response to calls for research on the relationship between audit tenure and audit failure investigate this relationship through an examination of prior audit reports for a sample of U.S. companies. The study posits that there is an association between auditor tenure and audit reporting for bankrupt firms. A multivariate analysis is used to test for this relationship. Results of the study indicate that there were more audit reporting failures in the earlier years of auditor – client relationship than when auditors served the client for longer periods. The results of this study debunk the notion that longer auditor tenure leads to impaired independence. These arguments lead to the development of the second hypothesis (in the alternative form):

Hypothesis 2a: The longer the auditor tenure the higher the amount of non-audit services supplied.

2.2.2. Auditor Type

The competence of the auditor to provide non-audit services is another factor that may explain the supply of non-audit services. The Big 4 auditors offer a broader scope of services than do the non-Big 4 audit firms. Furthermore, the Big 4 auditors have access to a broader scope of resources and this is available to the auditors of the firm. In addition, the Big 4 auditors have access to many technical workshops that the non-Big 4 may not have access to. The access to more resources, training and workshops would mean that Big 4 auditors are technically more competent in the provision of many accounting services including many of the non-audit services.

The Big 4 auditors also have a global presence and are easily able to transfer expertise on a global scale. The Big 4 also have the ability to hire and retain the best personnel. The global presence means that they are the preferred choice for multinational companies who may want the same firm to provide accounting auditing services over the world. The ability to hire and retain the best personnel also means that the Big 4 would be able to provide better services. In many cases, the Big 4 are also the preferred choice for banks, underwriters, auditor committees and financiers (Arnett and Danos 1979; Christodoulou 2010).

Research studies also indicate that the Big 4 auditors provide higher quality services (Francis 2004; Watkins et al. 2004). Simunic and Stein (1987) and Francis and Wilson (1988) argue that the Big 4 have invested heavily in building their brand reputation and as a result, provide higher quality services to protect the reputation. Prior research also indicates that the Big 4 invest heavily in technology compared to the non-Big 4 (Sirois and Simunic 2010). This investment also enables the Big 4 to provide better services.

In summary, the Big 4 accounting firms have access to greater resources, conduct more training for staff, are able to attract and retain qualified personnel, have a global presence, and have

invested heavily in technology. The quality of services offered by the big 4 is also superior compared to the non-big 4. These factors indicate that the Big 4 auditors have a greater ability to supply a range of services. Given these arguments, we frame our third hypothesis in the alternative form:

Hypothesis 2b: The Big 4 auditors supply higher amounts of non-audit services.

2.3. Clients demand and supply of non-audit services

An audit client may demand non-audit services from its incumbent auditor. Therefore, an auditor may supply non-audit services to meet the needs of its audit client. Prior literature outlines that a firm's need for non-audit services is driven by its size, complexity, performance, special situations, high growth, and high business risk.

The size of a firm is the most important factor affecting the need for non-audit services. The larger a firm is, the more the need for non-audit services. The complexity of the firm's operations also determines the need for non-audit services. The more complex a firm the more non-audit services it will need. Various variables can be used to proxy for complexity.

Firms that are performing poorly need more non-audit services to improve their performance (see for example Parkash and Venable 1993; DeFond et al. 2002; Abbott et al. 2003; Whisenant et al. 2003). On another note, firms performing poorly may not be able to afford non-audit services and hence, their demand for non-audit services may be limited.

The need for non-audit services rises if one off special situations arises for a firm. These special situations include the issue of new equity or the issue of new debt instruments, appointment of a new CEO, and so on. Prior studies such as Firth (1997) and Abbott et al. (2003) provide evidence that special situations like the issue of new equity and debt securities leads to an increase in the need for non-audit services. Business risk facing a firm may also affect the need for non-audit services. The firms that face higher business risk and financial risk need more consulting services to minimize these risks.

Finally, firms facing high growth may need more non-audit services as they may be expanding into new markets, new products, and so on. The need for non-audit services in such a case will be driven by the need to explore such growth opportunities.

Given that the need for non-audit services may influence the supply of non-audit services, we include a range of variables that proxy firm size, complexity, special situations, growth, risk, and performance in the non-audit services supply model. These variables are not the focus of this study. The focus of this study is on the opportunistic and efficiency factors in explaining the supply of non-audit services, therefore these variables are included in the model as controls.

In this section, we reviewed literature on non-audit services and the effect of jointly providing non-audit and audit services to a client on the perceived independence of the auditor. Drawing on prior literature, a model for the supply side of the market for non-audit services is developed. It is posited that auditors are willing to provide more non-audit services when audit fee is being low-balled with a view to recoup the low-balled audit fees. In addition, it is hypothesized that the Big 4 auditors supply more non-audit services due to their ability to provide non-audit services based on their expertise and resource availability. Further, longer tenured auditors are hypothesized to supply more non-audit services as they have gained client specific knowledge through the supply of audit services and that they are the preferred choice of the management. The next section presents the methodology and the model that will be employed to test the hypotheses.

3. Data and methodology

3.1. Sample Selection

The data is selected from companies listed on the Australia Securities Exchange (ASX) from the year 2000 through to 2010. During this period, significant changes took place in the regulation of the accounting and auditing practices in Australia. These significant changes to the regulatory environment were brought about by the very high profile corporate collapses in Australia and around the globe. In Australia, the changes to regulations were brought about through the enactment of legislations such as CLERP 9. Therefore, the periods 2000 to 2010 was chosen to represent the reporting periods before and after the enactment of CLERP 9.

The data used in this research are from two sources. The accounting variables were obtained from the Aspect Financial database and corporate governance and auditor related variables were hand-collected from the published annual reports of the sample firms.

Table 1 provides a summary of the sample selection procedure and distribution of the sample by industry. The initial sample consisted of 50 randomly selected firms. Firms with missing data or incomplete data are excluded from the sample. The final sample consists of 30 firms.

Insert Table 1 here

3.2. Modelling the supply of non-audit services

An empirical model on the supply of non-audit services is developed and tested in this paper. We postulate that the lower the audit fee, the higher the amount of non-audit services supplied by an auditor. Thus, the first variable included in the model is audit fee. A negative correlation is expected between audit and non-audit fees. The knowledge, technical expertise and the capabilities of an auditor will also drive the amount of non-audit services supplied. Auditor tenure and auditor type proxy for knowledge, technical expertise and capability in the model. The model also includes a number of variables to control clients need for non-audit services. As we argued in the previous section, an auditor may supply non-audit services because the client demands these services. The final model is as follows:

$$\begin{aligned} \text{LNNASFEE} = & b_0 + b_1\text{LNAF} + b_2\text{AUDITOR_TENURE} + b_3\text{AUDITOR_TYPE} \\ & + b_4\text{LNTA} + b_5\text{INVREC} + b_6\text{CATA} + b_7\text{LIQ} + b_8\text{DA} + b_9\text{ROA} \\ & + b_{10}\text{LOSS} + \varepsilon \end{aligned} \quad (1)$$

A discussion of the dependent variable, independent variables of interest and the control variables follow in the next three subsections.

3.2.1. Dependent variable

The dependent variable in the non-audit supply model is the amount of non-audit service supplied by the incumbent auditor to its audit client. This is measured by the dollar value of the auditor provided non-audit services for a particular financial year. Prior studies, for example, Ashbaugh et al. (2003), and Ferguson (2004) have used this measure in the non-audit service demand models.

Prior studies have also used other measures of non-audit services. Craswell (1999), Frankel et al. (2002) and Larcker and Richardson (2004) used the ratio of non-audit fees to total fees. Other studies have used non-audit fee to audit fee ratio (e.g. Firth 1997; Parkash and Venable 1993). Studies in the past have also scaled the non-audit fees by total revenue of the auditor (Chung and Kallapur 2003). The scaled measures of non-audit fees capture the economic importance of a client to the auditor. As a result, scaled measures are widely used in the audit literature.

As we are only interested in the magnitude of the non-audit services provided in this study, only the dollar value of the non-audit services is employed in the non-audit service supply model. The use of other measures of non-audit services would distort results. However, we do perform additional sensitivity analyses using the various alternative measures for non-audit services.

3.2.2. Independent variables - variables of interest

The audit fee variable (LNAF), tests for the cross subsidization of audit and non-audit fees. We use the natural logarithm of total audit fees paid to the auditor for external audit services in the model. This data is disclosed in the annual reports of companies within the sample.

We also examine audit firm tenure (AUDITOR_TENURE) in this study. There are two common proxies for auditor tenure used in prior studies. The first is a dummy variable to reflect a change in auditor in the current financial year and the second is the actual duration of the current auditor (Hay et al. 2006). The actual duration of the auditor tenure is used in the non-audit service supply model. As part of additional analyses, we also employ the alternative measure for auditor tenure. We discuss this later in this section as part of our sensitivity tests.

Auditor type (AUDITOR_TYPE) is a variable used to measure the technical competence of the auditor to provide non-audit services. The proxy for auditor type is the size of the auditor. We divide the auditors into Big 4 international audit firms and non-Big 4 as per prior studies. Auditor type is a categorical variable where one indicates a Big 4 auditor and zero indicates a non-Big 4 auditor. Information on auditor type is obtained from the annual reports of the companies in our sample.

3.2.3. Control variables

An important control variable in the model is a measure for client size. Client size is measured by the natural logarithm of total assets (LNTA). Prior studies into audit fee models indicate that client size accounts for 70 percent variation in audit fees (Simunic 1980; Hay et al 2006). Thus, we include this variable as a control in the non-audit fee model as larger client's demand more non-audit services while small clients demand less. We expect that client size will have a positive impact on non-audit fees.

There are other control variables included in the model. The first set of these control variables include debt to equity ratio (DA), quick asset ratio (LIQ), the return on investment (ROA) and a categorical variable for loss in the last three years (LOSS). These variables measure the risks associated with a particular client. The second set of control variables employed in the model include the ratio of inventory and receivables value to total assets value (INVREC) and the ratio of current assets to total assets of an entity (CATA). These second set of control variables measure client complexity. A complex business has greater needs for consultancy and advice. Thus, we expect these variables to be positively associated with non-audit fees.

3.3. Statistical tests and sensitivity analyses

An Ordinary Least Squares (OLS) regression is utilised in this study with the dependent variable being the level of non-audit services supplied. In order to use regression analysis a number of assumptions have to be satisfied. These assumptions are:

- The sample is representative of the population.
- The error is a random variable.
- The independent variables are measured with no error.

- The predictors are linearly independent, that is, multicollinearity is not a problem.
- The errors are uncorrelated.
- The variance of the error is constant across observations.

A number of analyses including correlation diagnostics were performed to ensure that these conditions are satisfied for the dataset.

A number of sensitivity tests were also performed. The model was re-run with various alternative measures for non-audit fees. These alternative measures include the ratio of non-audit fees to total fees and the ratio of non-audit fees to audit fees as done in prior studies (see for example Firth 1997; Parkash and Venable 1993; Whisenant et al. 2003; DeFond et al. 2002 and Craswell 1999).

Where necessary the data was transformed into its logarithmic form to remove skewness and kurtosis. A 90% winsorisation was conducted on the dataset so that it is more robust to outliers.

4. Empirical Results

4.1. Descriptive statistics and correlations

Figure 1 presents a graphical illustration of the average audit and non-audit fees from the year 2000 to 2010.

Insert Figure 1 here

An interesting trend is visible in the graph presented in Figure 1. The average audit fee for the sampled firms was lower than the average non-audit fees from the year 2000 to 2003. Since the year 2004, the average audit fee has been higher than the average non-audit fees. The other trend that is visible in the graph is a general decline in average non-audit fee over the years and a general rise in audit fee over the same period.

The trend is interesting. In the early part of the decade, large scale corporate collapses in Australia and around the world lead to various regulations being enacted. In the U.S. Sarbanes-Oxley Act was enacted in 2000, which banned the auditors from supplying many types of non-audit services to their audit clients. In Australia, CLERP 9 required the public disclosure of non-

audit fees paid to the auditor and required the purchase of non-audit services from the incumbent auditor to be pre-approved by the audit committee. Although auditor provided non-audit services were not banned in Australia; the heightened limelight on non-audit services and the various requirements in CLERP 9 on auditor provided non-audit services might have lead to a decline in the auditor-provided non-audit services.

Table 2 presents the average audit and non-audit fees from the year 2000 to 2010. The average audit fee for the sampled firms in 2000 was \$790,659. This increased to \$2,045,805 in the year 2010. On the other hand, the amount of non-audit services declined from an average of \$1,559,424 in the year 2000 to \$1,168,655 in the year 2010. The data presented in Table 2 confirms the trend visible in Figure 1.

Insert Table 2 here

Table 3 presents statistics describing the dependent and independent variables in our non-audit supply model.

Insert Table 3 here

The descriptive statistics in Table 3 relate to the entire sample from 2000 to 2010. The average (median) amount of non-audit services supplied by incumbent auditors to their audit clients is \$1,193,949 (\$338,555). The average (median) audit fee is \$1,464,144 (\$688,596). On average incumbent auditors who jointly supplied audit and non-audit services to their clients earned non-audit fee equivalent to 82 percent of the audit fee. While for a number of firms in the sample, non-audit services purchased from the incumbent auditor was nil or lower than 82 percent of the audit fee, there are firms in the sample with non-audit fees more than 82 percent of the audit fees. In some cases, for some firms, in some years, the non-audit fees exceeded the audit fees.

In addition, using data presented in Table 2, the ratio of non-audit fees to audit fees in the year 2000 was 197 percent and in the year 2010, it was 57 percent. This indicates that the percentage of revenue earned by auditors from non-audit services declined over the years from 2000 to 2010.

The average auditor tenure is 4.89 years for the entire sample. In Australia, there are no mandatory requirements for audit firm rotation; however, the lead audit partner needs to be rotated every 5 years which be further extended to 7 years upon approval from the audit committee. The descriptive statistics also reveal that the Big 4 auditors audited 90 percent of the firm years in our sample.

The mean (median) debt to asset ratio for the entire sample is 0.26 (0.24), that is, on average every dollar of asset is financed 26 cents by debt financing and 74 cents by equity financing. The mean (median) liquidity ratio for the entire sample is 1.32 (0.91). This indicates that for every dollar of current liabilities there is \$1.32 of current assets, meaning firms are liquid. Inventory and receivables make up 19 percent of the total assets of the sampled firms on average with a median value of 15 percent. The mean (median) return on assets is 7 percent (7 percent) for all the firms over the entire period from 2000 to 2010.

The mean (median) current assets to total assets ratio is 0.29 (0.29). This indicates that for the sampled firms current assets make up 29 percent of the total assets. The mean (median) value for the variable LOSS is 0.14 (0.00), which means that 14 percent of the firm years had reported losses in either the current year or the past 2 years.

The Pearson correlation coefficients are presents for the variables used in this study in table 4. Multicollinearity may pose statistical issues if the Pearson correlation coefficient is greater than 0.80 for any two variables (Wooldridge 2009). None of the correlations is greater than 0.80, meaning multicollinearity does not pose problems in our analysis. The other statistic used to test for multicollinearity problems is the Variance-Inflation-Factors (VIFs). The VIFs in all our statistical tests for all variables were less than 10, which is the threshold beyond which multicollinearity problems may arise (Wooldridge 2009).

Insert Table 4 here

The audit fees and non-audit fees are highly correlated ($r = 0.726$). As expected the size of a firm measured by total assets is also highly correlated with non-audit fees ($r = 0.589$). The correlation coefficients also reveal a high correlation between auditor type and non-audit fees, quick asset ratio and non-audit fees, the ratio of inventory and receivables to total assets and non-audit fees and the ratio of current Assets to total assets and non-audit fees. The variables auditor tenure, debt to asset ratio, return on assets, and loss in the current or past 2 years are all weakly correlated with non-audit fees.

4.2. Regression results

The regression results of the non-audit supply model are presented in Table 5. An OLS regression is employed to model the supply side of the market for non-audit services. The regression statistics reveal that our model fits the data well and is highly significant with an F-statistics of 51.455 ($p = 0.000$). The overall fit of model is good with an r-square of 63.7 percent. This indicates that 63.7 percent of changes in non-audit fees can be explained by the variables employed in the model. This is comparable with prior studies modelling non-audit fees.

The regression results indicate that there is a significant positive relationship between LNAF and LNNASFEE. The coefficient for LNAF is positive and significant at the 1 percent level of significance ($p = 0.000$). The result indicates that in Australia, audit fees are not cross-subsidised by non-audit fees. This leads to the rejection of Hypothesis 1.

The regression results also indicate that the coefficient for AUDITOR_TENURE is negative and significant ($p = 0.000$) leading to a rejection of Hypothesis 2a. However, the coefficient for AUDITOR_TYPE is positive and significant ($p = 0.000$) supporting Hypothesis 2b.

Insert Table 5 here

The coefficient for LNTA is positive but not significant ($p = 0.838$). This indicates that while the size of the client is positively associated with the supply of non-audit services, the variable itself is not significant in the determination of the supply of non-audit services. The coefficient for DA is negative and significant ($p = 0.000$). This indicates that the higher the debt to asset ratio the

lower the amount of NAS supplied to the audit client. The coefficient for LIQ is positive and significant ($p = 0.003$). The coefficient for INVREC is negative and not significant ($p = 0.261$).

The coefficient for ROA is positive and significant ($p = 0.052$). The coefficient for LOSS is positive and significant indicating that firms making losses are being supplied more non-audit services. Finally, the coefficient for CATA is negative and significant ($p = 0.082$).

4.2.1. A discussion on the supply of non-audit services

The regression results do not support the hypothesis that auditors supply non-audit services to recover low-balled audit fees. This is evident by the positive relationship between audit and non-audit service fees. On the other hand, the hypothesis that non-audit services are supplied because auditors have the knowledge, capability and technical ability to supply such services, is partially supported by the results. The coefficient for one of the variables measuring an auditor's knowledge, capability and technical ability to supply non-audit services is positive and significant. The regression result shows that Big 4 auditors are more likely to supply their audit clients with non-audit services. This is in line with our hypothesis that the Big 4 audit firms have more resources, capability and ability to supply a range of services compared to the non-Big 4 firms. They also have a global presence and are able to transfer resources and capabilities on a global basis as and where required.

The coefficient for the other variable measuring knowledge, capability and technical ability to supply such services is negative and significant. The other variable is AUDITOR_TENURE. It was hypothesised that the longer an auditor serves an audit client the more knowledge and capability that the auditor gains on the client and thus the higher the ability to supply non-audit services to the particular audit client. However, our results indicate that the longer the auditor serves a particular audit client the lower the amount of non-audit services supplied to that client.

Since the results do not indicate a cross subsidisation of audit fee with non-audit fee and that one of the variables measuring the efficiency factors affecting the supply of NAS is positive and significant, the concerns with the joint supply of audit and non-audit fee are less likely to affect auditor independence in Australia. These results are also supported by the general decline in non-

audit fees from 2004 onwards and the fact that after 2004 the non-audit fees have been lower than the amount of audit fees for the sampled firms. Previously, one of the major concerns of regulators and legislators around the globe and in the U.S. has been the economic dependence of audit firms on non-audit service revenues. The regulators were quite right; as our analysis indicated, in the year 2000 the non-audit fees for the sampled firms was 197 percent of audit fees. This has declined over the years to around 57 percent in 2010.

4.3. Additional analyses

4.3.1. Sensitivity analyses

Prior studies have employed alternative measures of non-audit services. In accordance with these prior studies, we employ non-audit to total fee ratio and non-audit to audit fee ratio as independent variables and find that the results remain qualitatively similar to that reported in our main analysis. This indicates that our results are not sensitive to different measures of the independent variable.

We also employ the alternative measure for auditor tenure. In our main analysis we had included the actual number of years the current auditor served the client. In the additional analysis we include a categorical variable to measure tenure. Our results in the additional analysis remain qualitatively similar to that reported in our main analysis.

4.3.2. Robustness tests

The sample used in our study includes a number of financial institutions. The banks and financial institutions follow additional financial reporting and corporate governance requirements and are heavily regulated. We drop these firms from our sample and re-run the model. The results obtained after dropping these firms do not change our results significantly.

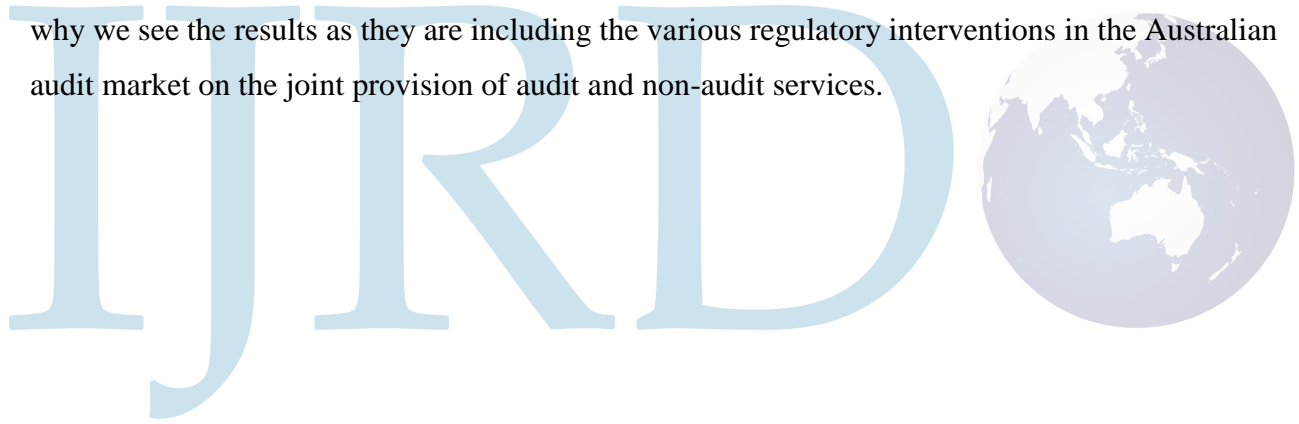
5. Conclusion

This paper examines the supply side of the market for non-audit services. An empirical model for the supply side of the market is developed and tested. There are two competing hypotheses presented in this paper. The first hypothesis argues that the supply of non-audit services is a result of low-balled audit fees whereby audit firms supply non-audit services to recover low-

balled audit fees. The second set of hypotheses argues that auditors supply non-audit services for efficiency reasons. The factors that indicate the supply of non-audit services for efficiency reasons are auditor tenure and auditor type.

The results of this study show that audit fee low-balling is not a reason for the supply of non-audit services as audit fee is not cross-subsidised by non-audit fee. The results also indicate that Big 4 auditors supply more non-audit services supporting our efficiency hypothesis. However, the other variable representing efficiency reasons for the supply of non-audit services is negative and significant as well.

The overall results of this study do not indicate that non-audit services pose a threat to auditor independence at least for the Australian firms in the years examined. There are various reasons why we see the results as they are including the various regulatory interventions in the Australian audit market on the joint provision of audit and non-audit services.



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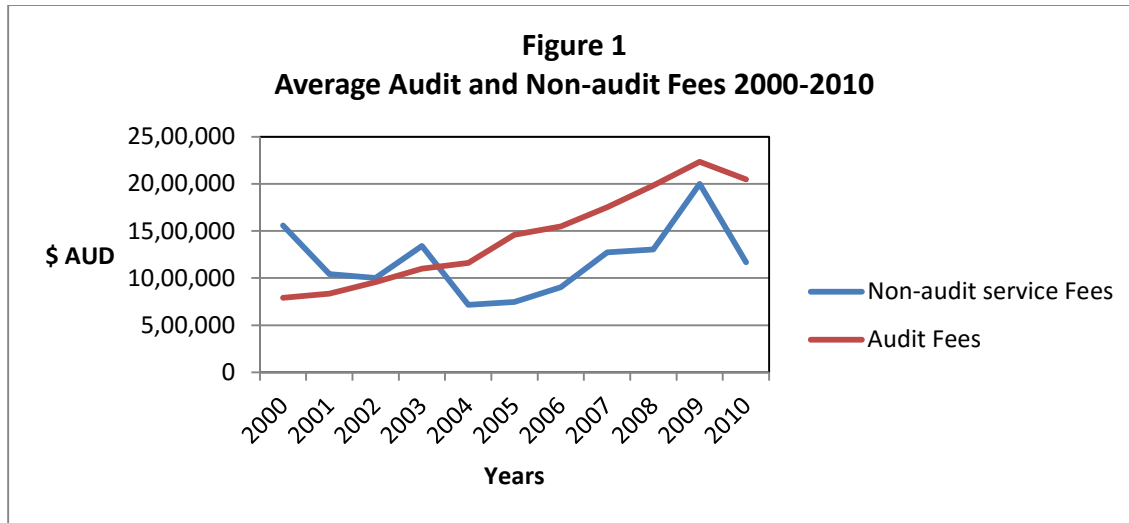


Table 1**Sample selection procedure and distribution of sample****Panel A: Sample selection procedure**

Firms chosen randomly from population	50
Firms with incomplete and missing data	20
Final Sample	30

Panel B: Distribution of sample by industry

GICS	Industry description	N	%
10	Energy	4	13.33
15	Materials	3	10.00
20	Industrials	2	6.67
25	Consumer Discretionary	2	6.67
30	Consumer Staples	12	40.00
35	Healthcare	1	3.33
40	Financials	5	16.67
45	Information Technology	0	0.00
50	Telecommunication Services	1	3.33
55	Utilities	0	0.00
Total		30	100

Table 2
Average Audit and Non-Audit Fees 2000-2010

Year	NAS Fees	Audit Fees
	\$	\$
2000	1,559,424	790,659
2001	1,042,953	836,023
2002	1,000,874	958,426
2003	1,342,354	1,099,951
2004	716,419	1,160,317
2005	746,528	1,460,297
2006	901,609	1,548,458
2007	1,271,577	1,753,063
2008	1,303,520	1,983,397
2009	2,000,050	2,233,218
2010	1,168,655	2,045,805

TABLE 3

Descriptive Statistics of Variables^a

		Overall Sample		
Panel A: Dependent Variable		N = 289		
Variable Description (Names)	Mean	Median	Std. Dev.	
Non-audit fees (NASFEE) \$	1,193,949	338,555	2,235,267	
Natural log of NASFEE (LNNASFEE)	5.55	5.58	0.79	
Panel B: Variables of Interest				
Variable Description (Names)	Mean	Median	Std. Dev.	
Audit Fees (AF) \$	1,464,144	688,596	2,040,252	
Natural log of AF (LNAF)	5.77	5.84	0.66	
Auditor Tenure (AUDITOR_TENURE) years	4.89	4.00	3.00	
Auditor Type (AUDITOR_TYPE)	0.90	1.00	0.30	
Panel C: Control and Other Variables				
Variable Description (Names)	Mean	Median	Std. Dev.	
Total assets (TA) \$	4,814,757,702	1,709,688,500	8,018,993,548	
Natural log of TA (LNTA)	9.21	9.23	0.72	
Receivable and inventory intensity (INVREC)	0.19	0.15	0.17	
Current Assets to Total Assets Ratio (CATA)	0.29	0.29	0.19	
Liquidity (LIQ)	1.32	0.91	1.73	
Debt to assets (DA)	0.26	0.24	0.22	
Return on assets (ROA)	0.07	0.07	0.11	
Loss in Current or last three years (LOSS)	0.14	0.00	0.35	

^a the sample includes firms from the year 2000 through to 2010.

Dependent Variable:

NASFEE = fees billed (\$ actual) for auditor provided non-audit services.

LNNASFEE = the natural of NASFEE.

TABLE 3 Continued

Variables of Interest:

AF = fees billed (\$ actual) for the audit of the annual financial statements.

LNAF = the natural log of AF.

AUDITOR_TENURE = the actual number of years the incumbent auditor served the client.

AUDITOR_TYPE = an indicator variable set to 1 if the auditor is a BIG4, 0 else.

Control and Other Variables:

TA = the total assets of a firm measured in \$ thousands.

LNTA = the natural log of TA.

DA = the total debt to TA ratio.

LIQ = the ratio of current assets to current liabilities.

INVREC = the ratio of inventory plus receivables to TA

ROA = return on assets defined as earnings before interest and tax divided by
TA

CATA = the ratio of current to total assets

LOSS = an indicator variable equal to 1 if the firm made a loss in the last three
years

Table 4
Pearson Correlation Coefficients (n=289)

Variables	<u>LNNAS</u>	<u>LNAF</u>	<u>Auditor</u> <u>Type</u>	<u>Auditor</u> <u>Tenure</u>	<u>LNTA</u>	<u>DA</u>	<u>LIQ</u>	<u>INVREC</u>	<u>ROA</u>	<u>LOSS</u>	<u>CATA</u>
LNNAS	1.000										
LNAF	0.726*	1.000									
Auditor Type	0.454*	0.390*	1.000								
Auditor Tenure	0.098**	0.326*	0.036	1.000							
LNTA	0.589*	0.753*	0.395*	0.280*	1.000						
DA	0.025	0.194*	0.149*	0.138*	0.162*	1.000					
LIQ	-0.146*	-0.285*	-0.255*	0.014	-0.376*	-0.144*	1.000				
INVREC	0.167*	0.319*	0.089**	0.021	0.036	-0.314*	-0.098**	1.000			
ROA	0.051	0.082**	-0.031	0.060	0.050	-0.248*	0.095***	0.213*	1.000		
LOSS	-0.021	-0.182*	-0.067	0.033	-0.126**	0.193*	0.028	-0.237*	-0.556*	1.000	
CATA	0.102**	0.221*	-0.088**	-0.061	-0.138*	-0.319*	0.240*	0.699*	0.235*	-0.203*	1.000

*, **, *** significant at the 1%, 5% and 10% levels respectively.

See table 3 for variable definitions.

TABLE 5
Regression Results

Variable	Expected Sign	Coefficient	t-value	p-value
Constant		-0.830	-1.832	0.068
LNAF	-	0.844	12.016	0.000*
AUDITOR_TENURE	+	-0.180	-4.563	0.000*
AUDITOR_TYPE	+	0.202	5.004	0.000*
LNTA	+	0.013	0.205	0.838
DA	+	-0.197	-4.720	0.000*
LIQ	+	0.130	3.040	0.003*
INVREC	+	-0.064	-1.126	0.261
ROA	+	0.086	1.950	0.052***
LOSS	+	0.200	4.525	0.000*
CATA	+	-0.106	-1.743	0.082***
Adjusted R ²	0.637			
F-Statistic	51.455			
Probability (F-Statistic)	0.000			

*, **, *** significant at the 1%, 5% and 10% levels respectively.

See table 3 for variable definitions.