Auditor Responses to Changes in Business Risk:

The Impact of the Global Financial Crisis

on Auditors' Behaviour in Australia

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Abstract

The study examines the impact of the Global Financial Crisis (GFC) on changes in auditor behavior in Australia, in particular, whether auditors change their likelihood of issuing a going concern opinion and their audit effort in response to the GFC. For listed companies, we test whether the GFC impacts the propensity of auditors to issue going concern modifications, audit fees and audit report lag. Controlling for client characteristics, we find an increase in the propensity to issue going concern opinions during the period 2008-2009 compared with the period 2005-2006 and that Big N auditors respond to the GFC earlier than non-Big N auditors. We also find evidence of an increase in audit fees but no evidence of longer audit report lags during the crisis period relative to the pre-crisis period.

1. Introduction

The purpose of this study is to investigate how auditors respond to changes in client business risk. The recent Global Financial Crisis (GFC) (2007-2009) provides an environment in which we can investigate whether auditors change their behavior in response to higher client risk. A dynamic environment may impact auditors' perceived consequences of issuing an inappropriate audit opinion leading auditors to change their behavior in conducting an audit (Kida, 1980). Prior research shows that auditors increase their professional skepticism (Mautz and Sharaf, 1961; Moizer, 1995) and increase their audit effort (Mautz and Sharaf, 1961) in response to higher audit business risks (see Bamber *et al.,* 1993; Bell *et al.,* 2008), higher perceived client business risks (Bell *et al.,* 2001), higher litigation risk (Asthana *et al.,* 2009), when making audit opinion judgments in groups (Chung and Monroe, 2000) and where auditors perceive a more severe consequence of issuing an inappropriate audit opinion.

Previous research has not however investigated how auditors respond to a specific change in the audit environment, like the GFC, where the client risk is high and there is increase in pressure both internally and from audit report users for auditors to implement sufficient and appropriate audit procedures to reduce the audit risk to an acceptable level. A descriptive study by Xu *et al.* (2011) shows there is a significant increase in the frequency of going concern opinions in the GFC period, from 12% in 2005-2007 to 18%-22% in 2008-2009. However, Xu *et al.* (2011) acknowledge a more careful examination of changes in client business risk and changes in auditor behavior is needed to investigate how auditors respond to the GFC.

The impacts of the GFC on the real economy (Allen and Carletti, 2008) included increased funding difficulties and share market illiquidity (Frank *et al.,* 2008). During the

GFC, many companies were unable to access finance or refinance through financial institutions, the share market or asset sales. An extreme consequence of liquidity risk was observed through corporate failures. US financial giants such as Bear Stearns, Lehman Brothers, FannieMae and FreddieMac filed for bankruptcy or were bailed out by the US government during the GFC. Similarly in Australia high profile corporate collapses included Opes Prime, Asset Loan Group, Apollo Life Sciences, ABC Learning Centres, Storm Financial and Strathfield. This period also saw an increase in the number of smaller companies entering into administration in Australia[1].

In an environment where clients are experiencing financial distress, auditors may assess an increase in audit risk. Sources of this risk may include greater regulatory scrutiny in an attempt to increase perceived market transparency, reputational effect through greater risk of audit failure and greater litigation risk. We identify three risk management strategies available to auditors: resigning from risky clients; increasing audit effort; and/or increasing the propensity to issue modified audit reports. Resigning from existing risky clients does not provide auditors a timely way to manage the increased clients' business risk arising from the GFC because current regulatory requirements make it difficult for auditors to resign from existing clients[2] and evidence from prior research shows auditors do not view managing their client portfolio as an effective approach to addressing higher client business risk[3]. Therefore, only two approaches, changes in propensity to issue going concern modifications and

[1] ASIC reports the number of companies entered into external administration are 7277 in 2005, 7099 in 2006, 7521 in 2007, 9113 in 2008, 9437 for 2009, and 3855 for the first five months of 2010 (Australian Securities and Investments Commission, 2010b).

[2] If an auditor wishes to resign from an existing client, auditors are required to state reasons to ASIC (Corporations Act 2001 Section 329 (7)) and seek approval from ASIC (Corporations Act 2001 Section 329 (5)). Even if auditors apply for resignation, they are not allowed to resign if ASIC refuses their application (Australian Securities and Investment Commission 1992). ASIC will only consent to a resignation at a time other than the Annual General Meeting in exceptional circumstances.

[3] Barkess (1999) reports 272 auditors of Australian public companies resigned from their clients in the period of 1992-1995, of which only 2 (0.7%) auditors resigned because their clients are financially distressed and only 11 (4%) auditors resigned because of changes in company growth.

changes in audit effort, are likely to be adopted by auditors during the GFC. We examine both of these approaches in this study.

Our results indicate that during the GFC period (2007-2009) auditors increase their propensity to issue going concern opinions and exert extra effort relative to the pre-GFC period (2005-2006). We also find that the increase in the propensity of going concern opinion issuance in response to the GFC is more pronounced for Big N auditors than non-Big N auditors. Regarding incremental audit effort, we find that the GFC is associated with higher audit fees and but not with increased audit report lag[4]. The remainder of our study is organized as follows: we describe the background to the GFC and develop our testable hypotheses in Section 2; our sample selection criteria and models are illustrated in Section 3; our descriptive statistics and results are reported in Section 4; our additional tests are reported in Section 5; and we present our conclusion in Section 6.

2. Background and Hypothesis Development

2.1 Background

The GFC presents a challenging environment with declining economic conditions and illiquid debt markets. Many companies who sought to refinance loans in late 2008 faced great difficulty finding new finance impacting on their ability to continue operations. These conditions created additional pressure on auditors as if auditors do not flag these financially distressed clients before they fail, as required by auditing standards ASA 701 (Auditing and Assurance Standards Board, 2007b) and ASA 570 (Auditing and Assurance Standards Board, 2007a), auditors may face penalties from regulators and the court.

ASA 570 requires auditors to consider the appropriateness of using the going concern assumption in clients' financial reports at the client risk assessment stage. When audit

[4] Audit report lag is measured as the number of days between financial year end and the date of the auditor signing the audit opinion. We use it to capture audit effort after the balance sheet date.

evidence indicates that the going concern assumption may not be appropriate, ASA 570 requires auditors to modify audit procedures to further investigate the impact of risk factors on the clients' ability to continue as a going concern and to examine the disclosure adequacy of the going concern uncertainty. When it is highly improbable that clients will continue as a going concern, both ASA 570 and ASA 701 require auditors to modify their audit reports.

To raise the awareness of auditing issues during the GFC, auditing standard setters issued guidelines to the audit profession on additional considerations. A bulletin issued in April 2009 emphasizes the importance of considering the appropriateness of applying going concern assumptions to clients which had no going concern problems previously, to carefully evaluating clients' management incentives and assessing clients' risks of material misstatements, to communicate with clients' management, and to issue appropriate audit opinions (Auditing and Assurance Standards Board, 2009). Similarly, the International Auditing and Assurance Standards Board issued a staff audit practice alert in January 2009 to highlight the importance of carefully assessing going concern issues during the GFC. Specifically, auditors were required to challenge the appropriateness of clients' going concern assumptions more frequently, to press clients to adequately disclose issues impacting the going concern assumption and to include emphasis of matter paragraphs where appropriate (International Auditing and Assurance Standards Board, 2009).

Auditors also faced increasing scrutiny by regulators and audit report users during the GFC. In October 2008, the Australian Securities and Investments Commission (ASIC) commenced a $200 million legal action against KPMG, the former auditor of collapsed group Westpoint for the negligent conduct of audits of the financial accounts of various Westpoint companies (this proceeding is set down for trial in the Federal Court of Australia for 5 September 2011 (Australian Securities and Investment Commission, 2010a). Three individual partners involved in the Westpoint audit were banned by ASIC as registered auditors for up

to two years (Australian Securities and Investment Commission, 2009a; Washington, 2009). On June 26 2009, the commissioner of the ASIC, Michael Dwyer, highlighted the importance of the going concern opinions issued by auditors as one of the "specific areas most affected by the current economic conditions" (Australian Securities and Investments Commission, 2009b, p.1). He also confirmed that ASIC had and would continue to put additional resources into the surveillance of auditors (Hepworth and Harris, 2009).

Despite the existence of capped auditor legal liability and proportionate liability in Australia following the onset of the GFC, several legal actions have commenced against auditors for signing opinions on misleading financial reports. This trend is likely to continue with financial support from commercial litigation funders such as IMF (Australia) Ltd (Clark and Harris, 2008)[5]. On 27 May 2009, PricewaterhouseCoopers was sued in a shareholder class action by its former client, Centro Properties Group, for allowing the misclassification of a significant amount of debt as a non-current liability as opposed to a current liability (see Centro Property Group, 2009; Eyers, 2010). KPMG is likely to be sued by its client, OZ Minerals, as part of its defense against a class action. The funding provider of the potential shareholders class action points out that it is not the fact that OZ Minerals had financing difficulties during the GFC, but the non-disclosure of this fact that will form the basis of the shareholder class action (Eyers, 2010). Auditors' cost of being involved in legal actions can be high, even when the auditor has a strong defense. For example, in September 2009, Ernst & Young settled a case with the administrators of collapsed gold miner, Sons of Gwalia, for

[5] The number of securities class actions in Australia has increased in recent years (Clark and Harris, 2008). This can be attributed to 1) greater difficulties claiming damages under tort law after the tort law reform in 2002-2003; 2) successful settlement of the first Australian securities class action, King v AG (formerly GIO Holdings Ltd), for $112 million in 2007, which was soon followed by others; 3) the increased availability of class action funding through commercial litigation funding in Australia (Clark and Harris, 2008).

$125 million, which was one of the largest settlements against an auditor in Australia (Emery, 2009)[6].

In an environment with greater litigation risk and increased scrutiny by regulators particularly where severe penalties can be imposed on auditors for risks highlighted by standard setters and regulators, auditors are likely to actively manage their risk exposure. We focus on two risk management strategies used by auditors in response to the increased client business risk as a result of the GFC: increases in the likelihood of issuing going concern modified audit reports (H1-H2) and additional audit effort (H3-H4).

2.2 Hypothesis development

Prior literature shows that auditors change their propensity to issue going concern opinions to protect themselves from high litigation risk (Thoman, 1996) and to respond to close scrutiny from regulators (see Geiger *et al.,* 2005; Fargher and Jiang, 2008) and media coverage of clients (Joe, 2003). The GFC increased clients' business risks and consequently increased auditors' risk exposure in the form of a greater likelihood of issuing an inappropriate opinion, higher potential legal liabilities and greater regulatory scrutiny.

When the financial condition of a large number of companies deteriorates concurrently with an economic downturn, the going concern assumption implied in the financial report may no longer be appropriate. If the auditor does not challenge the going concern assumption made by the client and investors subsequently suffer losses due to the issuance of an unmodified audit report, the auditor is likely to be involved in any subsequent litigation.

Judging the appropriateness of the going concern assumption is however difficult for auditors in a dynamic environment with high levels of uncertainty. To determine whether a

[6] Total revenues for Ernst & Young from Australia in 2007 were AU$906 million (International Accounting Bulletin, 2007).

company can continue as a going concern, auditors need to take into account the clients' financial condition, clients' operating difficulties and factors that can mitigate these problems, such as permission to roll over debt from creditors, availability of additional funds, promise of financial support from major shareholders and factors indicating profitable operations in the near future. There is a degree of judgment involved in this decision and this judgment is likely to be influenced by competing risks faced by auditors: the risk of litigation arising from the issuance of inappropriate opinions and the risk associated with greater regulatory scrutiny versus the risk of losing clients and hence future revenues. Therefore, in an environment with higher audit risk (due to an elevated risk of auditors issuing inappropriate audit opinions) and higher audit business risk (due to auditors suffering financial penalty from issuing unmodified audit reports to subsequently failed clients), auditors may issue more going concern opinions than expected in a high risk environment. This will be tested by the following hypothesis:

Hypothesis 1: Companies are more likely to receive going concern opinions for a given level of risk during the period of GFC compared to the period pre-GFC, ceteris paribus.

Prior literature suggests that the reaction of Big N auditors to a changing environment can be different from the reaction of non-Big N (Fargher and Jiang, 2008). There are two competing theories as to whether Big 4 audit firms are more conservative in audit reporting as compared with non-Big 4 firms. The more prevailing theory indicates Big 4 firms have higher reputation costs (Geiger and Rama, 2006) and "deeper pockets" (DeAngelo, 1981) and hence have more to lose in the case of audit failure. As a result, Big 4 firms are likely to adopt more conservative audit reporting strategies relative to non-Big 4 firms. In contrast, Craswell *et al.* (2002) argue smaller firms do not have as many resources as Big 4 firms, so they are less competent in detecting errors compared with Big 4 firms. Hence, non-Big 4

audit firms may issue modified audit reports more frequently to compensate for less competence in a risky environment.

There is some anecdotal evidence to suggest that Big N auditors may have responded more promptly than the non-Big N auditors directly to an increase in audit risk during the GFC. In 2008, the Audit Quality Review Board (AQRB) noted the following in relation to the GFC:

> "The AQRB review teams paid particular attention this year to the way in which [Big 4] firms responded to the growing global financial crisis. All the [Big 4] firms showed leadership by way of staff bulletins and education seminars devoted to the effects of the crisis and how engagement teams should plan their audits to respond appropriately. Key challenges and heightened risks were identified in regard to matters such as asset valuations, going concern considerations, treatment of borrowings, impairment of non-financial assets such as goodwill and financial statement disclosure of complex financial instruments."

(The Treasury, 2010, page 34). On balance, we expect Big N auditors have a higher propensity to issue going concern opinions than non-Big N auditors due to their "deeper pockets", higher reputation cost and GFC related training. This will be tested by the following hypothesis:

H2: Big N auditors are more likely to increase the propensity to issue going concern opinions for a given level of risk during the period of the GFC, ceteris paribus.

As part of their risk management strategy, auditors approach audits more cautiously in response to increased business risk and this can result in an increase in audit effort (see Bell *et al*., 2001; Bell *et al*., 2008). Prior literature supports the theory that auditors will put in more effort in a higher risk environment (see Simunic, 1980; Simunic and Stein, 1996; Seetharaman *et al.,* 2002; Choi *et al.,* 2008; Francis and Wang, 2008). This is probably due to audit partners' perception of good judgment. Emby and Gibbins (1988) argue that audit partners are concerned with being able to defend their decision and they find partners monotonically increase the amount of justification as the probability of negative outcome increases. The additional audit effort can be in the form of a more conservative client risk

assessment, extending the scope of audit procedures, increasing the amount of audit evidence collected, obtaining more expert advice, a higher proportion of work done by experienced staff and a greater involvement of audit partners.

As audit effort is positively correlated with audit fees (Davis *et al*., 1993), this additional audit effort will be reflected in audit fees. Research related to SOX enforcement in the US reveals higher audit fees are charged to clients during the post-SOX period relative to the pre-SOX period (see Bedard and Johnstone, 2005; Ghosh and Lustgarten, 2006; Ghosh and Pawlewicz, 2009), because of higher audit-work related requirements (Ghosh and Pawlewicz, 2009), higher litigation liability (Ghosh and Pawlewicz, 2009) and a more highly regulated audit environment (Bedard and Johnstone, 2005) in the post-SOX era. Redmayne *et al*. (2010) find auditors increase their audit effort as reflected in billing hours and audit fees for clients receiving wider press coverage.

We predict that auditors are likely to put in more effort and hence increase audit fees during the GFC. This will be tested by the following hypothesis:

H3: Auditors receive higher audit fees during the period of GFC in comparison to the period pre-GFC, ceteris paribus.

Another way to cope with increased client business risks is to increase audit report lag, thereby giving auditors more time to address the additional risk factors (see Bamber *et al*., 1993; Schmidt, 2008). For example, Krishnan and Yang (2009) report that auditors have a longer audit report lag in 2002 compared to the pre-Enron period. Where an auditor finds going concern issues in the client they will delay the completion of their audit to await further, hopefully favorable, evidence in favor of issuing a going concern opinion (see Carey *et al.,* 2008; Citron *et al.,* 2008) . Therefore, we expect longer audit report lags in the period of the GFC compared to the pre-GFC period. This will be tested by the following hypothesis:

H4: The audit report lag is longer during the period of GFC compared to the period pre-GFC, ceteris paribus.

3. Methodology

3.1 Data and sample selection

The data required for the study is obtained from multiple sources. The audit opinion and audit report lag data is extracted from the UNSW Audit Fee and Audit Reporting Database. The financial data is from the Aspect Huntley's financial database. Stock market information comes from the Share Price and Price Relative (SPPR) database. Data on American Depository Receipts is obtained from the websites of the New York Stock Exchange, the National Association of Securities Dealers Automated Quotation System and the Bank of New York.

The study covers two periods: the pre-GFC period 2005-2006 and the GFC period 2007-2009. Although the Australian financial market reflected little impact from the US sub-prime problems in 2007, Australian auditors may have foreseen the potential risk to the audit profession and altered their audit strategy decisions accordingly[7]. In Australia, the unemployment rate began to rise in October 2007. Australian auditors' reactions to the GFC are likely more pronounced from 2008 onwards due to the intensified financial crisis in the US at that time. Grosse (2010) suggests the US sub-prime crisis started to develop into a global financial crisis from 2008 with the first major event indicating the spillover effect being the failure of Countywide Financial in January 2008. This argument is supported by the fact that the Reserve Bank of Australia progressively cut interest rates from 7.25% in September 2008, to a level of 3% in 2009.

[7] Auditors may have taken into consideration the US housing market declined rapidly from the middle of 2006; default rates of subprime mortgages reaching seven years high by the first quarter of 2007; two funds managed by Lehman Brothers collapsing in August 2007 (Jones, 2009); and, most importantly, FreddieMac declaring its intention to stop purchasing sub-prime mortgages on 7 February 2007 (United States Federal Reserve, 2010).

[INSERT TABLE 1 HERE]

Table 1 summarises the impact of the sample selection criteria. There are 9,930 firm-years listed on the Australian Stock Exchange for the period 2005-2009. Accounting for data requirements, this population is reduced to an available analysis sample of 5,491 firms as described in Table 1.

3.2 Models

3.2.1 Going Concern Model

We use a two-stage going concern model developed by Krishnan and Krishnan (1996) and adopted by Fargher and Jiang (2008) to test whether auditors have a higher propensity to issue going concern opinions for a given level of risk during the GFC compared to pre-GFC (H1), and whether Big N auditors are more conservative than non-Big N auditors in response to the GFC (H2). An essential attribute of the two-stage going concern model is that it effectively separates the costs and benefits auditors consider when forming audit opinions from the clients' financial characteristics (see Krishnan and Krishnan, 1996; Fargher and Jiang, 2008). This is important because we are interested in whether auditors increase their propensity to issue going concern opinions when considering all relevant factors rather than merely confirming that auditors issue more going concern opinions during the GFC.

Stage one

$$PGC=\beta_0+\beta_1 CURRENT+\beta_2 LEV+\beta_3 LLOSS+\beta_4 CASH+\beta_5 INV+\beta_6 DEBTOR+\beta_7 AGE+\beta_8 LTA+\beta_9 MIN+\beta_{10} IT+\beta_{11} RETURN+\beta_{12} ZSCORE+\beta_{13} BIG4+\beta_{14} 2006+\beta_{15} 2007+\beta_{16} 2008+\beta_{17} 2009+\varepsilon \quad (1)$$

Dependent Variable

PGC=potential going concern modification indicator variable. If a client should be given a going concern opinion based on its risk profile, PGC is equal to 1, 0 otherwise[8];

Control variables

[8] The value of the dependent variable is jointly determined by the actual going concern opinions and the right hand side variables. We run a probit regression and obtain the $X_i B + \varepsilon_i$. If the $X_i B + \varepsilon_i > 0$, $PGC = 1$; if $X_i B + \varepsilon_i \leq 0$, $PGC = 0$ (Fargher and Jiang, 2008).

CURRENT=ratio of current assets to current liabilities;
LEV=ratio of long-term debt to total assets;
LLOSS=1 if client has a loss in one of the past three years, 0 otherwise;
CASH=ratio of cash assets to total assets;
INV=ratio of inventories to total assets;
DEBTOR=ratio of receivables to total assets;
AGE=1 if the firm has been listed for three or more years, 0 otherwise;
LTA=natural logarithm of client total assets, where the total assets are measured in dollars;
MIN=1 if the client is in the mining industry, 0 otherwise;
IT=1 if the client is in the information technology industry, 0 otherwise;
RETURN=common stock returns (including dividends and capital adjustments) minus the industry index return (equally weighted);
ZSCORE= Probability of bankruptcy as measured by Altman's ZScore (Altman, 1968)[9];
BIG4=indicator variable that is coded 1 if the client is audited by one of the Big N auditors, 0 otherwise;
2006=1 for firm-year observations from 2006, and 0 otherwise;
2007=1 for firm-year observations from 2007, and 0 otherwise;
2008=1 for firm-year observations from 2008, and 0 otherwise;
2009=1 for firm-year observations from 2009, and 0 otherwise.

Stage two

$$GC|PGC=\beta_0+\beta_1 LTA+\beta_2 ZSCORE+\beta_3 MTB+\beta_4 NISSUES+\beta_5 NBORROW+\beta_6 BNEWS +\beta_7 LOPINION+\beta_8 FEERATIO+\beta_9 LNNAS+\beta_{10} ASW+\beta_{11} BIG4+\text{Variables of interest} + \varepsilon \quad (2)$$

Dependent variable
GC|PGC=1 if a client actually received a going concern opinion and PGC is equal to 1 from the first stage, 0 otherwise;

Control variables
LTA=natural logarithm of client total assets, where the total assets are measured in dollars;
ZSCORE=probability of bankruptcy as measured by Altman's Z-Score (Altman, 1968);
MTB=ratio of market value of equity to book value of equity;
NISSUES=is coded 1 if the client had new issues in the year, 0 otherwise[10];
NBORROW=is coded 1 if the client had new borrowings in the year, 0 otherwise;
BNEWS=is coded 1 if the client did not pay dividends in the year, 0 otherwise;
LOPINION=1 if the client received a modified opinion in the previous year, 0 otherwise;
FEERATIO= ratio of client audit and non-audit fees to audit firm's total fee income;
LNNAS=natural logarithm of clients' non-audit services, where the clients' non-audit services are measured in dollars;
ASW=indicator variable that is coded 1 if the client switched auditors in that year, 0 otherwise;
BIG4=1 for firm year audited by a member of the Big 4, 0 otherwise;
Variables of interest

[9] *ZSCORE*=1.2 (Working Capital/Total Assets)+1.4 (Retained Earnings/Total Assets)+3.3 (EBIT/Total Assets)+0.6 (Market Value of Equity/Total Liabilities)+0.999 (Sales/Total Assets). The higher the z-score, the less likely clients will go bankrupt (Altman, 1968).

[10] Fargher and Jiang (2008) regard having either new issues or new borrowings during the financial year as good news to the market and therefore reduce the likelihood of a going concern opinion. However, this is not necessarily the case in the GFC. In an illiquid environment, increase in borrowings may indicate the client's lack of cash. Accordingly, this variable is split this variable into two separate variables.

2006=1 for firm-year observations from 2006, and 0 otherwise;
2007=1 for firm-year observations from 2007, and 0 otherwise;
2008=1 for firm-year observations from 2008, and 0 otherwise;
2009=1 for firm-year observations from 2009, and 0 otherwise;
*2006*BIG4*=1 for firm-year observations audited by any of the Big N auditors and from year 2006, 0 otherwise;
*2007*BIG4*=1 for firm-year observations audited by any of the Big N auditors and from year 2007, 0 otherwise;
*2008*BIG4*=1 for firm-year observations audited by any of the Big N auditors and from year 2008, 0 otherwise;
*2009*BIG4*=1 for firm-year observations audited by any of the Big N auditors and from year 2009, 0 otherwise.

If a company-year observation has a value 1 for *PGC* (i.e. potential going concern modification), it is identified by stage one of the going concern model as a company that should be given a going concern opinion. In stage two of the going concern model, only those companies that should be given going concern opinions and in fact were given such opinions are coded as 1 for *GC|PGC*. If any of the year variables (i.e. 2007, 2008 or 2009) are positive and significant, it is demonstrated that auditors increase the propensity to issue going concern opinions to reduce the increased client business risks during the *GFC* (H1). Where *Year*BIG4* interaction is positive, Big N auditors are more conservative regarding audit opinion issuance (H2).

3.2.2 Audit Fee Model

We adopt the fee model specification used by Ferguson *et al*. (2003). In addition, we include two indicator variables for US-cross-listed companies and audits undertaken by Big N auditors. We expect positive relationships between the two control variables and *LAF*, since Australian companies cross-listed in US pay higher audit fees compared to non-cross-listed Australian companies (see Fargher and Carson, 2007; Salman and Carson, 2009) and Big N auditors charge premiums for higher quality audits (see DeAngelo, 1981; Craswell *et al*., 1995; Choi *et al.,* 2008). If H3 is supported, that is auditors charge clients higher fees

during the GFC than before the GFC, the variables of interest 2007, 2008 and 2009 will be positive and significant. The audit fee model used in the main test is specified as follows.

$$LAF=\beta_0+\beta_1 LTAM+\beta_2 LNSUB+\beta_3 CATA+\beta_4 QUICK+\beta_5 LEV+\beta_6 ROA+\beta_7 FOREIGN+ \beta_8 OPINION+\beta_9 YEND+\beta_{10} LLOSS+\beta_{11} BIG4+\beta_{12} USLIST+\text{Variables of interest}+\varepsilon \quad (3)$$

Dependent variable
LAF=natural logarithm of audit fees measured in thousands of dollars;

Control variables
LTAM=natural logarithm of total assets measured in millions of dollars;
LNSUB = natural logarithm of total number of subsidiaries;
CATA =ratio of current assets to total assets;
QUICK =ratio of current assets, less inventories, to current liabilities;
LEV =ratio of long-term debt to total assets;
ROA= ratio of earnings before interest and tax to total assets;
FOREIGN =proportion of foreign subsidiaries;
OPINION=1 if client is given report other than standard unmodified report, 0 otherwise;
YEND =0 if the client's financial year ended other than 30 June, 1 otherwise;
LLOSS=1 if the client reports a loss in any of the last three years, 0 otherwise;
BIG4=1 if the client is audited by one of the Big N auditors, 0 otherwise;
USLIST=1 if the company is listed in US under the American Deposit Receipt Level II, Level III, 0 otherwise[11].

Variables of interest
2006=1 if the firm-year observation is from 2006, 0 otherwise;
2007=1 if the firm-year observation is from 2007, 0 otherwise;
2008=1 if the firm-year observation is from 2008, 0 otherwise;
2009=1 if the firm-year observation is from 2009, 0 otherwise.

3.2.3 Audit Report Lag Model

To test whether auditors delay completing audits during the GFC period compared to pre-GFC period (H4), we use a model of audit report lag. The explanatory variables are from Ettredge *et al.* (2006), except that we exclude "extraordinary items" as it is not defined under the International Financial Reporting Standards, in effect since 2006. In addition we add two indicator variables representing type of auditor (BIG4) and companies with financial year end

[11] Under American Depository Receipt program, Level II and Level III cross listed foreign companies are listed in US stock exchanges and hence are required to prepare annual report (Form 20F) in accordance with American GAAP and compliance of SOX, while Level I and SEC Rule 144A ADR (private placement only) are not subject to such requirements (Salman and Carson, 2009).

during the auditors' busy season (BYEND) because of their common use in the audit report lag literature (see Ashton *et al*., 1987).

$$ARL=\beta_0+\beta_1 LTA+\beta_2 ROA+\beta_3 TLEV+\beta_4 SRTSUB+\beta_5 MIN+\beta_6 LOSS+\beta_7 GC+\beta_8 OTHOP +\beta_9 BIG4+\beta_{10} BYEND+\beta_{11} ASW+\text{Variables of interest} + \varepsilon \quad (4)$$

Dependent Variable
ARL=the number of days between the fiscal year end to issuance of audit report;

Control variables
LTA= natural logarithm of total assets measured in dollars;
ROA=net profit divided by total assets;
TLEV=total debt divided by total assets;
SRTSUB=square root of number of subsidiaries;
MIN=1 if the client is in mining industry, 0 otherwise;
LOSS=1 if the client reports a loss in the current year, 0 otherwise;
GC=1 if going concern opinion is issued, 0 otherwise;
OTHOP=1 if modified opinion is issued for reasons other than going concern, 0 otherwise;
BIG4=1 if the auditor is one of the Big 4, 0 otherwise;
BYEND=1 if the client's financial year ended 30 June, 0 otherwise;
ASW=1 if a client changed auditor during that year, 0 otherwise;

Variables of interest
2006=1 if the firm year observation is from 2006, 0 otherwise;
2007=1 if the firm year observation is from 2007, 0 otherwise;
2008=1 if the firm year observation is from 2008, 0 otherwise;
2009=1 if the firm year observation is from 2009, 0 otherwise.

We expect the variables 2007, 2008 and 2009 to be significantly positive if auditors postpone their deadline to finish an audit during the GFC period compared to the pre-GFC period (H4).

4. Descriptive Statistics and Results

4.1 Descriptive statistics for the going concern model

Table 2 reports the trend in Australian audit opinion issuance from 2005 to 2009. It shows an increase in the modification rate from the period 2005-2007 (i.e. 11.5%-13.5%) to the period 2008-2009 (i.e. 19.5%-20.8%). The dramatic rise in the modification rate is largely driven by the increase in the percentage of going concern opinions during the GFC which

account for over 84% of the issued modified audit reports. Of the going concern opinions, 92% are unmodified audit reports with emphasis of matter paragraphs (EoM) for issues relating to going concern. The percentage for more severe types of modifications, including qualified, adverse and disclaimer opinions, slightly increases from 1.8%-2.3% in 2005-2007 to 2.4 %-2.7% in 2008-2009. Table 2 also reveals that 2007 does not differ from 2005-2006 regarding opinion modification rate, going concern modification rate and qualification rate.

[INSERT TABLE 2 HERE]

Table 3 reports the number of audit opinions by two groups of audit firms (Big N vs. non-Big N) and by two types of audit reports (reports modified for going concern reasons and reports modified for other reasons). Overall, the percentage of going concern opinions for Big N auditors is lower than that for non-Big N auditors (11.5% for Big N vs. 24.8% for non-Big N, *Chi-square*=97.695, $p<0.01$); both Big N auditors and non-Big N auditors increase their frequency of going concern opinions over the period of GFC. Compared to a level of below 8% in 2005-2006, Big N auditors double the percentage of going concern opinions in 2008-2009 period (6.8%-7.9% in 2005-2006 vs. 13.8%-14.6% in 2008-2009). Similarly, non-Big N auditors increase their percentage of going concern opinions in the 2005-2006 period relative to the 2008-2009 period (15.9%-16.5% in 2005-2006 vs., 24.2%-24.5% in 2008-2009)[12].

[INSERT TABLE 3 HERE]

Table 4 provides the descriptive statistics for the variables in the going concern model for the full sample and the going concern sub-sample. Following Fargher and Jiang (2008), total audit fees and non-audit fees are transformed using natural logarithms; $1 is assigned to zero non-audit fees, and continuous variables except for the current ratio are winsorized to

[12] Despite Big N auditors having a smaller increase in going concern opinions than non-Big N auditors, it does not rule out the possibility that Big N auditors have a higher propensity than non-Big N auditors to issue going concern opinions in response to the GFC, because Big N auditors hold a different client portfolio to non-Big N auditors.

three standard deviations to eliminate the potential impact from extreme values. The current ratio (i.e. *CURRENT*) is winsorized for the highest 10% of values[13]. Both means and standard deviations are reported for each variable in Table 4.

[INSERT TABLE 4 HERE]

The descriptive statistics for the full sample in Table 4 show both the deterioration in liquidity and the strategies companies adopt to cope with the GFC environment. A higher percentage of companies report losses in the three years 2007-2009 (*LLOSS*), and a lower proportion of companies declare dividends during the financial crisis period of 2007-2009 period compared to 2005-2006. However, companies actively manage their liquidity risk by holding more liquid assets, borrowing less and restricting unnecessary reimbursements to ensure their viability during the GFC. Clients keep less inventory (*INV*) in their warehouses, reduce their accounts receivable (*DEBTOR*) levels, maintain more cash on hand (*CASH*) to ensure healthier liquidity (*CURRENT*), have less long-term debt (*LEV*) and less frequently increase their borrowings (*NBORROW*) to reduce the risk of bankruptcy (*ZSCORE*) in 2007-2009 relative to 2005-2006. In addition, clients try to reduce the amount paid to auditors, as evidenced by lower non-audit fees (*LNNAS*), lower percentages of audits conducted by Big N auditors (*BIG4*) (because they attract fee premiums for brand names (Craswell *et al.,* 1995) and more frequent audit switches (*ASW*). All these changes in companies are consistent with the fact that the GFC is a liquidity crisis, and the main problem faced by clients is a lack of credit from their lenders and a fear of cash shortages.

The descriptive statistics for the group of companies that receive going concern opinions before and during the GFC are also reported in Table 4. Companies receiving going concern opinions in 2007-2009 are less risky than those marked for going concern issues in

[13] This reduces the maximum value to 18.6 mitigating the potential effect of extremely high values on the analysis.

2005-2006 as illustrated by the following factors: more cash on hand, lower inventory levels (*INV*), lower receivables (*DEBTOR*) and lower levels of losses *(RETURN*). Moreover, despite the Big N auditors' market share in audit services decreasing over the two periods, the percentage of going concern opinions issued by Big N auditors does not change significantly over the same period.

4.2 Results from the going concern model (H1-H2)

We examine whether auditors increase their propensity to issue a going concern opinion during the GFC compared with before the GFC after controlling the client risk profiles in the first stage of the going concern model (H1). In the first stage of the model, the coefficients for *LLOSS* and *INV* are positive and significant at the conventional levels indicating prior year losses and higher inventory levels as signs of having going concern issues, while the coefficients of *CURRENT, CASH, LTA* and industry adjusted return (*RETURN*) are negative and significant indicating companies with more current assets to cover current liabilities, with more cash holdings, with a larger size and which provide better returns for investors are less likely to have going concern issues. The negative coefficient on receivables (*DEBTORS*) is however the opposite sign to that expected. This may be because clients who need to write off a significant amount of bad debts are more likely to be financially distressed.

In the second stage of the model, as expected, bankruptcy score (*ZSCORE*) is negative and significant indicating auditors are less likely to issue going concern opinions to financially sound clients. The variables for companies not declaring dividends (*BNEWS*)[14], companies with prior year modified audit reports (*LOPINION*) and high market to book

[14] If we use cancellation of dividend instead of declaring no dividend as bad news variable (*BNEWS*), results still hold for Hypothesis 1. However, the Hypothesis 2 test using dividend cancellation differs from the main test as follows: the year variable 2009 is positive but not significant (β=0.245, *Chi-square*=1.440, *p*-value=0.114, one-tailed) and the interaction term between year 2008 and the Big 4 is positive and significant (β=0.387, *Chi-square*=2.789, *p*-value=0.48, one-tailed).

ratios (*MTB*) are positive and significant showing auditors tend to issue going concern opinions to companies not able to pay dividends, to companies which have received modified audit reports previously and to companies with high intangible assets. More importantly, coefficients for the variables of interest are positive and significant indicating that auditors increase their likelihood of issuing going concern opinions to accommodate higher audit risk and audit business risk in 2008 and 2009 as compared with before the GFC supporting Hypothesis 1. However, the indicator variable 2007 is not significant at conventional levels, indicating auditors do not increase their propensity to issue going concern opinions in 2007. It is likely that in 2007 the impact of the GFC on client business risk had not reached a level significant enough to trigger an increase in the issue of going concern opinions. It is also likely that in 2007 only some auditors had increased their propensity to issue going concern opinions. To investigate this possibility, we analyse Big N compared with non-Big N auditors.

[INSERT TABLE 5 HERE]

We test whether the increase in propensity to issue going concern opinions in response to the GFC is more pronounced for Big N auditors compared to non-Big N auditors (H2). The results are reported in Table 5. From the stage two results, the 2007 variable is negative and the interaction between 2007 and Big N is positive and significant, suggesting that all auditors on average react less to higher client risk in 2007 but that Big N auditors do respond strongly to higher client risk by issuing modified opinions in 2007. By 2008 and 2009 the year indicators are positive and significant: suggesting that all auditors (Big N and non-Big 4) respond by issuing going concern opinions when the GFC is intensified. In contrast, Big N auditors show a higher propensity to issue going concern opinions in 2007 and 2009, though not in 2008, than non-Big N auditors, indicating Big N auditors are more sensitive to risks. The result that Big N auditors factor the implications of the financial crisis

into their audit opinions earlier than non-Big N auditors may be because many of their clients operate overseas and also because more information is communicated within the Big N audit firms' global networks. Overall, the Big N auditors react to the GFC more promptly and their reactions last longer than non-Big N auditors, but when the GFC is at a peak there is no significant difference between Big N and non-Big N auditors regarding audit opinion issuance. The result is consistent with the argument that Big N auditors are more sensitive to higher audit and business risks because they have more to lose if they issue inappropriate audit opinions (DeAngelo, 1981).

4.3 Descriptive statistics for the audit fee model

Decisions on how much audit effort should be made in various audit procedures, as a way to manage audit risk, can also be affected by the auditors' overall risk tolerance. We test this by winsorizing *LEV* and *ROA* to three standard deviations and measure the total assets in millions of dollars (Ferguson *et al.,* 2003). We also winsorize the top 10% of *QUICK* to prevent extreme values in the sample. Descriptive statistics are reported in Table 6 for the full sample of observations. On average, clients are charged higher audit fees (*LAF*) in 2007-2009 when compared to audit fees in 2005 and 2006. Client profitability in the period 2007-2009 is lower due to the deteriorating economic conditions as reflected by a decrease in *ROA* and a higher percentage of companies reporting losses (*LLOSS*) in the three years 2007-2009. As a response to the GFC, clients cut back their operations by closing subsidiaries (*LNSUB*), increase the liquid assets on hand (*QUICK*) and reduce borrowings (*LEV*). The correlation between control variables in the audit fee model is calculated but not reported[15].

[INSERT TABLE 6 HERE]

4.4 Results for the audit fee model (H3)

[15] There are four correlations exceeding 0.5: company size (*LTAM*) is positively correlated with leverage (*LEV*), profitability (*ROA*) and client complexity (*LNSUB*); it is also negatively associated with incidence of prior year losses (*LLOSS*).

[INSERT TABLE 7 HERE]

Table 7 examines whether Australian auditors charge higher audit fees to compensate for their incremental audit effort during the GFC (H3)[16]. The explanatory power of the model is comparable to prior studies (adjusted R^2=82.6%). The coefficients are in the expected directions with the exception of the coefficient on the non-busy year end variable. Audit fees are higher for larger clients (*LTAM*), companies with more subsidiaries (*LNSUB*), more current assets (*CATA*), higher leverage (*LEV*), higher proportion of overseas subsidiaries (*FOREIGN*), modified opinions (*OPINION*), audits conducted by Big N auditors (*BIG4*) and clients cross-listed in US (*USLIST*); audit fees are lower for more liquid companies (*QUICK*), clients not reporting losses in the past three years (*LLOSS*) and companies with higher profitability (*ROA*). The variables of interest, 2007, 2008 and 2009, are significantly positive as expected at the 1% level. This indicates that auditors do charge higher audit fees for additional work undertaken in response to higher audit risk and audit business risk during the GFC, and H3 is supported.

However, significant year indicator variables do not rule out the alternative explanation that audit fees increase irrespective of economic conditions. We therefore examine the relative magnitude of the annual increase in fees during the GFC period. We can infer from the results in Table 7 that audit fees increase by around 6.72%-13.54%[17] each year, but there is an increase of 6.72% in 2007, 8.11% in 2008 and 11.18% in 2009 compared to the previous year. First, the larger increase in fees in 2009 is not driven by an increase in

[16] Palmrose (1989) reports that it is rare that the audit fee arrangements are not subject to re-negotiation under any circumstances. Additional work during the GFC could be one reason for fee renegotiation. Even if auditors do not charge higher audit fees for additional audit procedures undertaken immediately (Schelleman and Knechel, 2010) , they may eventually compensate themselves by charging higher fees in subsequent years. Therefore, to eliminate the alternative explanation that auditors negotiate audit fee with clients upfront each year or every few years and increase audit fees at a fixed rate, we add year 2006 to our model.

[17] Following Craswell *et al.* (1995) the percentage increase over time in audit fees is calculated using the following formula: e^z-1, where z is the coefficient of the year indicator variable. Compared to 2005, audit fees increase by 13.54%, 21.17%, 31.00% and 45.64% in 2006, 2007, 2008 and 2009 respectively. Compared to the previous year, audit fees increase by 13.54%, 6.72%, 8.11% and 11.18% in 2006, 2007, 2008 and 2009 respectively.

auditor's hourly labor costs as a salary survey conducted by a recruitment firm, Hays, reveals both junior auditor and senior auditor annual salaries decrease, and manager salaries are maintained in 2009 compared to 2008 (Hays, 2008, 2009). Second, though the 11.18% increase from 2008-2009 is not as impressive as the 13.54% increase from 2005-2006, it is achieved under the pressure for fee reduction from clients. If compared with a 2% growth in PricewaterhouseCooper's global revenues and a 1% decrease in Ernst & Young's global revenues from assurance services in 2008-2009 (Maher, 2009), the 11.18% increase in audit fees on individual engagements, once factors which are known to impact audit pricing are controlled for, achieved by Australian audit firms in the same period is remarkable. Auditors would need to have presented good reasons to clients for this increase, such as additional audit effort, to justify the rise in fees in a difficult economic environment. Increases in audit fees may also be due to reduced resistance from clients against higher fees during the financial crisis because of a greater desire from clients to present financial reports considered trustworthy by investors. Ferguson *et al.* (2005) argue that because of imperfect information on audit quality, investors use audit fees as a proxy for audit quality: an audit fee reduction/increase can be interpreted as a decrease/increase in audit quality. In the GFC setting, clients are motivated to accept higher audit fees for better perceived audit quality especially in 2009 when their financial condition is improving. Overall, that auditors were able to increase audit fees by approximately 10% each year between 2007 and 2009, with no obvious increase in auditor salaries, suggests that, consistent with our third hypothesis, auditors are likely to have exerted greater effort in conducting audits during the GFC period, however other explanations cannot be entirely eliminated.

4.5 Descriptive statistics for the audit report lag model

The descriptive statistics of the variables in the audit report lag model for both the before GFC and the GFC sub-sample are reported in Table 8. The pre-GFC sub-sample has

an average audit report lag of 78.614 days, while the GFC sub-sample has a slightly shorter average audit report lag of 78.168 days. However, the difference in average report lag across the two periods is not significant.

[INSERT TABLE 8 HERE]

4.6 Results from the audit report lag model (H4)

We examine whether auditors postpone their deadline to finish audit work in response to an increase in risk as a result of the GFC (H4). Table 9 reports the results from the audit report lag model. All the control variables are in the expected direction except for profitability (*ROA*). Longer audit report lags are associated with smaller (*LTA*) and more highly leveraged clients (*TLEV*). Also, audit report lag is positively related to clients with more subsidiaries (*SRTSUB*), losses (*LOSS*), those receiving going concern opinions (*GC*) or other modified audit reports (*OTHOP*) and clients that switch auditors (*ASW*). Audits conducted by Big N auditors (*BIG4*) have significantly shorter audit report lags. The unexpected negative relation between audit report lag (*ARL*) and profitability (*ROA*) can be explained by the high correlation between high profitability and larger client size, leading to a longer lag for the larger, more complex and profitably clients. However, the coefficients on the experimental variables, 2007, 2008 and 2009, are negative which is contradictory to our expectations, though the audit report lag in 2008 is not significantly different from that in 2005. This indicates that auditors generally require less delay after the financial year end to sign off audit opinions during the GFC compared with before the GFC and the trend of shorter audit report lags is somewhat curtailed by the GFC in 2008.

This finding does not eliminate the possibility that auditors conduct additional audit procedures in 2007-2009 as auditors can work overtime to complete additional testing to meet the deadline; but it does reject the assumption that auditors wait longer for clearer risk

mitigating factors before completing audits. One possible reason for a shorter audit report lag in 2007 and 2009 is that auditors are pressed by their clients and clients' creditors to release audited annual reports quickly as many debt covenants are based on accounting figures. Another possible explanation is that the adoption of new accounting standards in 2005 and 2006 leads to longer audit report lags in those years and this delay reduces as clients, accountants and auditors become familiar with the standards from 2007 onwards.

[INSERT TABLE 9 HERE]

5. Additional Tests

5.1 Difference in propensity to issue going concern opinions between Big 4 auditors

Prior literature shows that some Big 4 auditors have a higher propensity to issue going concern opinions than other Big 4 auditors (Carson *et al.,* 2006; Kho, 2007) possibly due to industry expertise (Bruynseels *et al.,* 2006) or lower risk tolerance. Other research indicates PricewaterhouseCoopers charges higher audit fees than other Big N auditors implying superior audit services (see Simunic, 1980; Hay *et al.,* 2006). We extend our investigation to consider whether there is difference between Big 4 auditors regarding going concern opinion issuance. We find that there is no systematic difference between Big 4 auditors as to how audit reports are issued in response to the GFC.

5.2 Controlling for audit effort in two-stage going concern model

We find auditors are more likely to issue going concern opinions and charge higher audit fees in response to the GFC, but we do not control for audit effort in the going concern model. If we include unstandardized audit fee residuals from the audit fee model as an additional control variable in stage two of the going concern model, our results from H1-H2 still hold and the audit fee residuals are negative and significant in each regression.

5.3 One-stage going concern model

As most of the going concern models in the prior literature are designed as single stage models (see DeFond *et al.,* 2002; Carey and Simnett, 2006), we re-run the model as a one-stage model (see Fargher and Jiang, 2008). The results support H1 and H2 with one difference from our main results suggesting that auditors report more conservatively in 2007 (β=0.212 for *2007*, *Chi-square*=4.580, *p*-value=0.033, one-tailed). Our other findings are unchanged. The departure may be because the one-stage model captures increases in client business risk as well as changes in auditor behavior.

5.4 One-stage first-time going concern model

To capture the turning point where auditors decide to change from non-going concern opinions to going concern opinions, we apply the one-stage going concern model to first-time going concern opinions. This has the impact of reducing the number of going concern observations available for analysis. The results from the one-stage first-time going concern model confirm our findings in the main test for H1 and H2 except that the 2007 indicator variable is marginally significant for H1 in the one-stage first-time going concern model. By analyzing first-time going concern opinions we confine our sample to companies with more extreme changes in business risk profile and hence audit risk. The results from the first-time going concern model are as follows: auditors increase their propensity to issue going concern opinions in 2006-2009 relative to 2005 (H1)[18]. Non-Big N auditors increase their propensity to issue going concern opinions in response to the GFC in 2008 and 2009 but not in 2006 or

[18] β =0.229 for 2006, *Chi-square*=4.040, *p*-value=0.023,one-tailed; β=0.272 for *2007*, *Chi-square*= 5.62, *p*-value=0.009, one-tailed; β=0.747 for *2008*, *Chi-square*=54.908, *p*<0.001, one-tailed; β=0.604 for *2009*, *Chi-square*=33.76, *p*<0.001, one-tailed

2007[19]; and Big N auditors are more conservative than non-Big Ns as a result of the GFC (H2) in 2007-2009[20].

5.5 Going concern model applied to Big N and non-Big N separately

We also run the two-stage going concern model separately for the Big N and non-Big N sub-samples. Consistent with our main findings, Big N auditors respond to the GFC earlier than non-Big N auditors[21].

5.6 Client size effect on the audit fee model

We find auditors charge higher audit fees to compensate for their additional effort during the GFC period despite pressure from clients to reduce fees. Carson *et al.* (2004) provide evidence that Big N audit fee premiums exist in the small client segment, but not in the large client segment. As larger clients provide a greater proportion of auditors' total revenues, auditors may be less likely to risk losing a large client and hence be more reluctant to increase audit fees for large clients during the GFC. To test whether auditors treat clients of varying sizes differently, we take the top and bottom quartiles/deciles of observations ranked by total assets and re-run the audit fee model using each of these sub-samples. The main test results still hold for the bottom decile/quartile observations. However, as we exclude additional smaller clients, the fee increase for the GFC period gradually disappears. For the top quartile of clients, as we exclude additional clients, the increase in audit fees in

[19] β =0.154 for 2006, *Chi-square*=1.166, *p*-value=0.139, one-tailed; β=-0.059 for *2007*, *Chi-square*=0.016, *p*=0.346, one-tailed; β=0.646 for *2008*, *Chi-square*=27.56, *p*<0.001, one-tailed; β=0.412 for *2009, Chi-square*=10.628, p<0.001, one-tailed

[20] β =0.221 for 2006 and Big 4 interaction, *Chi-square*=0.846, *p*-value=0.178, one-tailed; β=0.548 for *2007* and Big N interaction, *Chi-square*=5.476, *p*=0.010, one-tailed; β=0.280 for 2008 and Big N interaction, *Chi-square*=1.769, *p*=0.092, one-tailed; β=0.544 for 2009 and Big N interaction, *Chi-square*=6.554, p=0.005, one-tailed

[21] The results for Big 4 auditors are as follows: β=0.628 for *2006*, *Chi-square*=2.958, *p*-value=0.043, one-tailed; β=0.999 for *2007*, *Chi-square*=6.350, *p*-value=0.006, one-tailed; β=0.793 for *2008*, *Chi-square*=5.712, *p*-value=0.009, one-tailed; β=1.335 for *2009*, *Chi-square*=11.492, *p*-value<0.001, one-tailed. The results for non-Big 4 auditors are β= -0.034 for *2006*, *Chi-square*=0.081, *p*-value=0.466, one-tailed; β= -0.973 for 2007, *Chi-square*=8.066, *p*-value=0.002, one-tailed; β=0.484 for 2008,*Chi-square*=2.220, *p*-value=0.068, one-tailed; β=0.278 for 2009,*Chi-square*=0.706, *p*-value=0.200, one-tailed.

2007 relative to 2005 disappears; for the top decile clients, the only significant increase in audit fees is in 2009 (i.e. not in 2006, 2007 or 2008). Overall, we find that auditors pass increases in costs more quickly onto smaller clients compared with larger clients.

5.7 Panel data estimation of the audit fee model and the audit report lag model

Prior literature shows that inferring temporal changes using cross-sectional data can result in bias from omitted variables (see Henderson and Kaplan, 2000; Ghosh and Lustgarten, 2006; Ghosh and Pawlewicz, 2009). One approach to mitigate the impact from omitted variables is to use panel data instead of cross-sectional models. Using panel data, in particular fixed effect estimators, enables companies to be compared against themselves across different years, thereby alleviating estimation bias from omitted variables (Henderson and Kaplan, 2000)[22].

We re-estimate the coefficients for the audit fee model (equation (3))[23,24]. While other variables are consistent with expectations and our main results, the companies with non-busy financial year end (*YEND*), previous years' loss (*LLOSS*) and US cross-listing status (*USLIST*) are not significant. The variables of interest, 2006, 2007, 2008 and 2009, are positive and significant, showing a more pronounced increase in audit fees than in the cross-sectional test in these years. In the cross-sectional test, the audit fee increase compared to the previous year is 13.54% in 2006, 6.72% in 2007, 8.11% in 2008 and 11.18% in 2009. In contrast, under the panel data approach the audit fee increase compared to the previous year

[22] Using panel data cannot fully mitigate the impact of the omitted variables if the value of omitted variable changes over time (Ghosh and Lustgarten, 2006). However, the impact from change in omitted variables within the same company over time is smaller than difference in omitted variables from different companies (Ghosh and Lustgarten, 2006).

[23] A Hausman test assuming that random effect estimators are fully efficient is rejected, with a *Chi-square* of 294.68 and a corresponding *p*-value smaller than 0.0001. This justifies the use of fixed effect estimators because random effect estimators cannot provide consistent estimates.

[24] To enable comparison with results from the cross-sectional approach, we used an unbalanced panel data for both the audit fee model and the audit report lag model where companies do not necessarily exist for each of the sample years.

is 17.04% in 2006, 10.52% in 2007, 9.85% in 2008, and 10.18% in 2009 respectively. This provides further support for H3.

Also, we estimate the fixed effect estimators for the audit report lag model[25]. Consistent with our findings in the cross-sectional analysis, the variables of interest, 2007, 2008 and 2009 are negative, showing audit report lags are actually shorter during the GFC as compared with before the crisis, possibly implying a greater pressure from creditors to obtain timely financial information when borrowers' liquidity risk is higher. Differing from our results in the cross-sectional test is that (*LTA*) is significantly positive. However, Henderson and Kaplan (2000) also find the positive relationship between audit report lag and client size from fixed effect estimators using a panel data approach.

5.8 Change model for audit report lag

To fully understand when auditors decide to change the time frame to complete audits, we also utilize a change model for audit report lag. The model specification is the same as the audit report lag model in the main test except the indicator *MIN* is excluded as there are no changes in this variable. The components of the audit report lag models in year *t* are compared with *t-1*. All the significant control variables are in the expected direction: change in client size (*ΔLTA*), change in leverage (*ΔTLEV*) and change in going concern opinions (*ΔGC*) are positively associated with change in audit report lags (*ΔARL*); change in profitability (*ΔROA*) is negatively related to change in audit report lags (*ΔARL*). Compared to audit report lag in 2006, we find decreased *ΔARL* in 2007, increased *ΔARL* in 2008 and no significant difference between *ΔARL* in 2009. This indicates the GFC does deter auditors from further shortening the audit report lag in 2008, is consistent with our main result.

6. Conclusion and Limitations

[25] Result from Hausman test rejects random effect estimators at 0.01 level (*Chi-square*=112.65, $p<0.0001$).

The objective of our study is to examine how auditors respond to increased risk associated with the GFC. In particular, we focus on two risk management strategies available to auditors: an increase in the likelihood of issuing going concern opinions and additional audit effort. We hypothesize that auditors increase their propensity to issue going concern opinions, and increase audit fees and audit report lag in the period of the GFC when compared to the period pre-GFC.

Using a large sample of 5,491 Australian listed non-financial companies over the period 2005-2009, we find an increase in the propensity to issue going concern opinions by auditors during the period 2007-2009 compared to the period 2005-2006. We also find that the increase in the propensity to issue going concern opinions is earlier and more pronounced for Big N auditors than non-Big N auditors. Regarding incremental audit effort, we find strong results indicating increased client business risk in the GFC leading to higher audit fees and increased audit procedures but we do not find that the GFC increases audit report lag. Contrary to our expectations, we find evidence of reduced audit reporting time periods during the GFC as compared with before the GFC. Overall, we find evidence that auditors respond conservatively to protect themselves from higher risk exposure during the GFC.

Our findings are of interest to auditors, regulators, and financial information users. Auditors can use this study as a self-assessment as to how well auditors cope with the GFC, in particular: whether auditors maintain a high level of professional conservatism over key areas, such as going concern assumptions and whether auditors dedicate sufficient resources to addressing an increase in audit risks such as an increased risk of misstatement, increased probability of fraud and asset revaluation issues. This study also informs regulators regarding auditor awareness of increased risks during the GFC and strategies adopted by the audit profession in response to the GFC. As a result, regulators can make an informed evaluation of the appropriateness of auditor behavior during the GFC. Findings from this study also reveal

that auditors do take the impact of the GFC into consideration when issuing opinions, which suggests that audit reports convey useful and timely information to financial statement users.

Our study is preliminary as the duration of the GFC is not yet known. Our results should be interpreted in light of some limitations. Firstly, audit fees and audit report lag are not direct measures of audit effort. Auditors may not charge their clients for additional costs incurred (Schelleman and Knechel, 2010) and hence audit fees may not fully capture the work done by auditors. Similarly measures of audit report lag can only capture audit work done after the balance date and are impacted by the time taken by the clients to finalize the preparation of financial reports. Second, despite our efforts to identify omitted variables, the results from the audit fee model and audit report lag model may be limited if variables that can explain these changes in behavior have not been included in our models. For example, prior literature shows the effectiveness of internal control as an essential factor impacting on audit report lag (Ashton *et al.,* 1987). Client internal control systems are likely to experience changes during the GFC as clients may be short of staff resources during this period. However, data is not available in Australia to examine this conjecture. Third, we are not able to disentangle how auditors manage their client portfolios during the GFC because regulatory requirements on auditor resignations in Australia make it difficult for auditors to resign from their clients in the short term.

Future research can consider the following issues. First, due to the contemporaneous nature of our study, we cannot investigate the impact of the GFC on long term client portfolio management. Laux and Newman (2010) find in a moderate legal liability environment, auditors are more likely to accept clients than in environments where litigation risk is high or low. Given Australian auditors are exposed to a moderate level of litigation risk, further research can examine a longer time span allowing client portfolio management to be investigated along with changes in audit effort and propensity to issue going concern

opinions. Second, we report the association between the GFC and changes in auditor behavior in the current study and attribute this association to the higher risk borne by auditors. However, we do not disentangle how higher risks interact with other factors, such as auditor knowledge and information cues, and how these factors contribute to auditor decision making processes. Nelson (2009) builds a conceptual model that demonstrates how factors such as audit evidence, auditor knowledge and auditor traits contribute to conservative audit judgments and how conservative audit judgments combined with auditor knowledge and auditor traits contribute to conservative actions. Future behavioral research can be done along this line to consider the complex linkage between higher client business risk, auditor judgement and the audit opinions observed.

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Table 1: Sample selection

Criteria	Total	2005	2006	2007	2008	2009
Total No. of companies as at 1st January	9143	1585	1707	1826	2005	2020
+First time listed companies during the year	787	181	197	282	75	52
Total No. of listed companies during the year	9930	1766	1904	2108	2080	2072
-First time listed companies with no financial data	458	98	126	165	24	45
-Delisted companies with no financial data	312	49	60	79	53	71
-Companies not issuing ordinary shares	98	13	15	10	32	28
-Companies reporting preliminary data only	261	10	147	11	15	78
-Foreign companies	399	75	69	84	96	75
-Non-12-month reporting period	61	26	6	11	9	9
-Negative equity	251	50	43	40	53	65
-Total assets<$1,000,000	140	29	26	20	21	44
-Companies in financial sector	1362	254	246	292	299	271
-No financial information	328	64	58	63	57	86
-No share price information	619	132	126	192	147	22
-No prior year audit information	144	9	8	95	28	4
-No audit fee data	6	1	2	1	2	0
No. of companies in the sample	5491	956	972	1045	1244	1274

Table 2: Trend of audit opinion issuance over 2005-2009

No. of Audit Opinions	**Total**	**2005**	**2006**	**2007**	**2008**	**2009**
	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)
Unqualified						
Unmodified	4496 (81.9%)	810 (84.7%)	838 (86.2%)	902 (86.3%)	968 (77.8%)	978 (76.8%)
With EoM	**871 (15.9%)**	**129 (13.5%)**	**112 (11.5%)**	**123 (11.8%)**	**242 (19.5%)**	**265 (20.8%)**
Significant uncertainty-GC	772 (14.1%)	103 (10.8%)	94 (9.7%)	105 (10.0%)	230 (18.5%)	240 (18.8%)
Significant uncertainty-others	96 (1.7%)	26 (2.7%)	18 (1.9%)	17 (1.6%)	11 (0.9%)	24 (1.9%)
Additional disclosures	1 (0.0%)				1 (0.1%)	
Inconsistent other information						
After balance sheet date	1 (0.0%)			1 (0.1%)		
Revised financial reports	1 (0.0%)					1 (0.1%)
Qualified	**124 (2.3%)**	**17 (1.8%)**	**22 (2.3%)**	**20 (1.9%)**	**34 (2.7%)**	**31 (2.4%)**
Qualified (going concern)	10 (0.2%)	1 (0.1%)	2 (0.2%)		4 (0.3%)	3 (0.2%)
Qualified (others)	45 (0.8%)	7 (0.7%)	5 (0.5%)	9 (0.9%)	14 (1.1%)	10 (0.8%)
Qualified with EoM for GC	46 (0.8%)	8 (0.8%)	10 (1.0%)	7 (0.7%)	11 (0.9%)	10 (0.8%)
Qualified with EoM (others)	3 (0.1%)		2 (0.2%)			1 (0.1%)
Adverse (going concern)	2 (0.0%)				1 (0.1%)	1 (0.1%)
Adverse (others)						
Disclaimer (going concern)	8 (0.1%)	1 (0.1%)	1 (0.1%)	1 (0.1%)	1 (0.1%)	4 (0.3%)
Disclaimer (others)	10 (0.2%)		2 (0.2%)	3 (0.3%)	3 (0.2%)	2 (0.2%)
Total number of audit opinions	**5491 (100%)**	**956 (100%)**	**972 (100%)**	**1045 (100%)**	**1244 (100%)**	**1274 (100%)**
Total number of going concern opinions	838 (15.3%)	113 (11.8%)	107 (11.0%)	113 (10.9%)	247 (19.9%)	258 (20.3%)

Table 3: Audit opinions by audit firms over 2005-2009

		2005			2006			2007			2008			2009		
		Total	Modified		Total	Modified		Total	Modified		Total	Modified		Total	Modified	
			Going Concern	Other		Going Concern	Other		Going Concern	Other		Going Concern	Other		Going Concern	Other
PwC	No.	121	7	2	117	1	1	113	5	3	109	10	4	104	10	0
	%		(5.8%)	(1.7%)		(0.9%)	(0.9%)		(4.4%)	(2.7%)		(9.2%)	(3.7%)		(9.6%)	(0.0%)
E&Y	No.	191	21	1	185	18	3	181	15	2	183	28	3	173	26	2
	%		(11.0%)	(0.5%)		(9.7%)	(1.6%)		(8.3%)	(1.1%)		(15.3%)	(1.6%)		(15.0%)	(1.2%)
KPMG	No.	127	8	3	125	7	1	131	11	0	135	16	4	144	20	5
	%		(6.3%)	(2.4%)		(5.6%)	(0.8%)		(8.4%)	(0.0%)		(11.9%)	(3.0%)		(13.9%)	(3.5%)
Deloitte	No.	80	5	1	99	10	0	104	12	0	111	20	1	105	21	1
	%		(6.3%)	(1.3%)		(10.1%)	(0.0%)		(11.5%)	(0.0%)		(18.0%)	(0.9%)		(20.0%)	(1.0%)
Big N Average	**%**		**7.9%**	**1.3%**		**6.8%**	**1.0%**		**8.1%**	**0.9%**		**13.8%**	**2.2%**		**14.6%**	**1.5%**
BDO	No.	55	17	3	41	9	6	81	16	4	127	43	5	135	42	3
	%		(30.9%)	(5.5%)		(22.0%)	(14.6%)		(19.8%)	(4.9%)		(33.9%)	(3.9%)		(31.1%)	(2.2%)
PKF	No.	62	7	4	63	8	1	61	7	2	77	15	2	81	14	2
	%		(11.3%)	(6.5%)		(12.7%)	(1.6%)		(11.5%)	(3.3%)		(19.5%)	(2.6%)		(17.3%)	(2.5%)
Grant Thor'n	No.	32	6	0	46	9	1	41	10	1	97	23	2	103	24	5
	%		(18.8%)	(0.0%)		(19.6%)	(2.2%)		(24.4%)	(2.4%)		(23.7%)	(2.1%)		(23.3%)	(4.9%)
Other	No.	288	42	19	296	45	14	333	37	18	405	92	8	429	101	20
	%		(14.6%)	(6.6%)		(15.2%)	(4.7%)		(11.1%)	(5.4%)		(22.7%)	(2.0%)		(23.5%)	(4.7%)
Non-Big N Average	**%**		**16.5%**	**5.9%**		**15.9%**	**4.9%**		**13.6%**	**4.8%**		**24.5%**	**2.4%**		**24.2%**	**4.0%**

Table 4: Descriptive statistics for the variables in the going concern model (H1-H2)

Panel A	Full sample			Going-Concern subsample		
Variables	2005-2006	2007-2009	*t* test	2005-2006	2007-2009	*t* test
	n=1928	n=3563	(*p* -value)	n=220	n=618	(*p* -value)
CURRENT	4.868	5.669	-4.912***	2.458	3.304	-3.182***
	5.583	6.096	(0.000)	3.104	4.082	(0.002)
LEV	0.084	0.072	3.236***	0.065	0.053	1.328
	0.130	0.125	(0.001)	0.128	0.115	(0.184)
CASH	0.230	0.268	-5.140***	0.158	0.209	-3.132***
	0.253	0.270	(0.000)	0.193	0.231	(0.002)
INV	0.059	0.046	4.678***	0.062	0.045	2.208**
	0.098	0.087	(0.000)	0.106	0.089	(0.028)
DEBTOR	0.116	0.097	5.286***	0.107	0.088	1.860*
	0.131	0.117	(0.000)	0.131	0.116	(0.064)
LTA	17.354	17.369	-0.247	15.936	16.149	-2.181*
	2.019	2.044	(0.805)	1.166	1.440	(0.030)
RETURN	-0.029	0.005	-1.439	-0.432	-0.240	-3.420***
	0.835	0.819	(0.150)	0.640	0.738	(0.001)
ZSCORE	12.038	14.129	-2.499**	1.003	3.240	-1.115
	28.054	32.220	(0.012)	26.018	25.363	(0.265)
MTB	2.805	2.723	0.911	3.276	3.212	0.197
	3.126	3.249	(0.362)	3.986	4.234	(0.844)
FEERATIO	0.044	0.039	1.765*	0.070	0.051	1.622
	0.119	0.106	(0.078)	0.161	0.129	(0.106)
LNNAS	7.238	5.977	8.812***	6.020	4.918	2.972***
	4.936	5.288	(0.000)	4.644	4.933	(0.003)
Panel B	**Full sample**			**Going-Concern subsample**		
Variables	2005-2006	2007-2009	*t* test	2005-2006	2007-2009	*t* test
	n=1928	n=3563	(*p* -value)	n=220	n=618	(*p* -value)
GC	0.110	0.170	-6.163***	NA	NA	
			(0.000)			
LLOSS	0.680	0.740	-4.844***	0.995	0.989	0.888
			(0.000)			(0.375)
AGE	0.820	0.770	4.728***	0.850	0.760	3.149***
			(0.000)			(0.002)
MIN	0.320	0.360	-3.392***	0.300	0.430	-3.364***
			(0.001)			(0.001)
IT	0.090	0.070	2.275**	0.130	0.080	1.851*
			(0.023)			(0.065)
BIG4	0.540	0.450	6.472***	0.350	0.310	0.982
			(0.000)			(0.326)
NISSUES	0.540	0.510	1.724*	0.590	0.560	0.763
			(0.085)			(0.446)
LOPINION	0.140	0.160	-1.983**	0.620	0.500	3.027***
			(0.047)			(0.003)
BNEWS	0.700	0.760	-4.133***	0.990	0.990	0.276
			(0.000)			(0.783)
NBORROW	0.310	0.280	2.717***	0.250	0.220	1.068
			(0.007)			(0.286)
ASW	0.090	0.120	-4.184***	0.140	0.150	-0.564
			(0.000)			(0.573)

Means and standard deviations are reported. ***, ** and * denote significance at the 1%, 5% and 10% level, respectively. All the reported *p*-values are two tailed.

The variables are defined as follows. *CURRENT* is the ratio of current assets to current liabilities; *LEV* is the ratio of long-term debt to total assets; *CASH* is the ratio of cash assets to total assets; *INV* is the ratio of inventories to total assets; *DEBTOR* is the ratio of receivables to total assets; *LTA* is natural logarithm of client total assets (in dollars); *RETURN* is common stock returns (including dividends and capital adjustments) minus the equally weighted industry index return; *ZSCORE* is the probability of bankruptcy as measured by Altman's *ZScore* (Altman 1968); *MTB* is the ratio of market value of equity to book value of equity; *FEERATIO* is the ratio of client audit and non-audit fees to audit firm's total fee income;

LNNAS is the natural logarithm of clients' non-audit services, where the clients' non-audit services are measured in dollars; *GC* is the indicator variable that is coded 1 if a client received a going concern opinion; *LLOSS* is a indicator variable that is coded 1 if client has a loss in one of the past three years, 0 otherwise; *AGE* is an indicator variable that is coded 1 if the firm has been listed for three or more years, 0 otherwise; *MIN* is an indicator variable that is coded 1 if the client is in mining industry, 0 otherwise; *IT* is an indicator variable that is coded 1 if the client is in information technology industry, 0 otherwise; *BIG4*=1 if the client is audited by one of the Big 4 audit firms, 0 otherwise. *NISSUES* is coded 1 if the client had new share issues in the year, 0 otherwise; *LOPINION* is an indicator variable that is coded 1 if the client received a modified report in the previous year, 0 otherwise; *BNEWS* is coded 1 if the client did not pay dividends in the year, 0 otherwise; *NBORROW* is coded 1 if the client had new borrowings in the current year, 0 otherwise; *ASW* is an indicator variable that is coded 1 if the client switched auditors in the current year, 0 otherwise.

Table 5: Results for going concern model (H1-H2)

Variables	H1			H2		
	n=5491			n=5491		
Stage 1	Estimate	Chi-square	*p*-value	Estimate	Chi-square	*p*-value
Intercept	4.991***	35.403	0.000	4.931***	35.046	0.000
CURRENT	-0.079***	56.100	0.000	-0.078***	55.503	0.000
LEV	0.235	0.476	0.490	0.245	0.533	0.464
LLOSS	1.256***	42.380	0.000	1.254***	42.250	0.000
CASH	-1.424***	54.612	0.000	-1.405***	52.853	0.000
INV	1.245**	6.150	0.013	1.214**	6.101	0.013
DEBTOR	-1.081***	9.486	0.002	-1.057***	9.303	0.002
AGE	-0.165*	3.572	0.059	-0.171**	3.920	0.048
LTA	-0.315***	39.063	0.000	-0.314***	40.960	0.000
MIN	-0.069	0.757	0.384	-0.063	0.656	0.420
IT	-0.092	0.518	0.469	-0.072	0.325	0.569
RETURN	-0.249***	29.703	0.000	-0.241***	27.668	0.000
ZSCORE	0.005*	3.312	0.069	0.004*	2.822	0.092
BIG4	0.007	0.003	0.963	0.027	0.029	0.869
2006	-0.206	0.548	0.457	-0.188	0.462	0.496
2007	0.783*	3.168	0.075	0.610	1.932	0.163
2008	0.185	0.518	0.474	0.196	0.578	0.448
2009	0.128	0.240	0.622	0.126	0.240	0.625
Stage 2						
(Intercept)	-1.176	2.016	0.155	-1.115	1.742	0.187
LTA	-0.013	0.073	0.789	-0.011	0.044	0.834
ZSCORE	-0.006***	6.656	0.010	-0.006**	6.300	0.012
MTB	0.040***	12.461	0.000	0.042***	12.461	0.000
NISSUES	0.047	0.504	0.476	0.049	0.518	0.469
NBORROW	-0.029	0.130	0.721	-0.034	0.160	0.688
BNEWS	0.672***	13.838	0.000	0.691***	13.764	0.000
LOPINION	1.434***	101.003	0.000	1.523***	60.373	0.000
FEERATIO	0.176	0.423	0.513	0.138	0.240	0.626
LNNAS	0.015**	4.494	0.034	0.015**	4.452	0.035
ASW	0.089	0.922	0.336	0.100	1.061	0.303
BIG4	0.081	0.303	0.583	-0.228	1.188	0.277
2006	0.306	1.488	0.111	0.197	0.518	0.236
2007	**-0.347**	**1.538**	**0.108**	**-0.456**	**2.341**	**0.064**
2008	**0.627*** **	**7.952**	**0.003**	**0.529** **	**4.796**	**0.015**
2009	**0.612*** **	**6.970**	**0.004**	**0.482** **	**3.803**	**0.026**
*BIG4*2006*				0.255	1.103	0.146
BIG4*2007				**0.491** **	**4.244**	**0.020**
BIG4*2008				**0.265**	**1.588**	**0.104**
BIG4*2009				**0.394** **	**3.133**	**0.039**
	Adjusted R^2 = 33.2%			Adjusted R^2 = 33.6%		

***, ** and * denote significance at the 1%, 5% and 10% level, respectively. Note the tests are two tailed except for the following variables: *2006*, *2007*, *2008*, *2009*, *BIG4*2006, BIG4*2007*, *BIG4*2008* and *BIG4*2009*, where the tests are one tailed. The variables are as defined in Table 4 and as follows: *2006* is coded 1 if the observation is from 2006; *2007* is coded 1 if the observation is from 2007; *2008* is coded 1 if the observation is from 2008; *2009* is coded 1 if the observation is from 2009; *BIG4*2006* is an interaction term between BIG4 and 2006; *BIG4*2007* is an interaction term between BIG4 and 2007; *BIG*2008* is an interaction term between BIG4 and 2008; *BIG4*2009* is an interaction term between BIG4 and 2009.

Table 6: Descriptive statistics for variables in the audit fee model (H3)

Variables	Full Sample		
	2005-2006	2007-2009	
	n=1928	n=3563	
	Mean (Standard deviation)	Mean (Standard deviation)	*t*-value (*p*-value)
LAF	4.249	4.398	-3.988***
	(1.357)	(1.225)	(0.000)
LTAM	3.540	3.555	-0.260
	(2.022)	(2.050)	(0.796)
LNSUB	1.641	1.560	2.279**
	(1.282)	(1.247)	(0.023)
CATA	0.451	0.450	0.022
	(0.266)	(0.271)	(0.983)
QUICK	4.551	5.398	-5.222***
	(5.645)	(6.179)	(0.000)
LEV	0.084	0.072	3.236***
	(0.130)	(0.125)	(0.001)
ROA	-0.144	-0.206	5.217***
	(0.399)	(0.446)	(0.000)
FOREIGN	0.225	0.262	-4.210***
	(0.304)	(0.329)	(0.000)
OPINION	15%	20%	-5.300***
			(0.000)
YEND	15%	12%	3.449***
			(0.001)
LLOSS	68%	74%	-4.844***
			(0.000)
BIG4	54%	45%	6.746***
			(0.000)
USLIST	0.4%	0.5%	-0.611
			(0.541)

The mean for each variable in the relevant period is reported above the standard deviation in the bracket. Reported *p*-values are two tailed. ***, ** and * denote significance at the 1%, 5% and 10% level, respectively. The dependent variable *LAF* is natural logarithm of audit fees, which is measured in thousands of dollars. The independent variables are defined as follows. *LTAM* is natural logarithm of total assets measured in millions of dollars; *LNSUB* is natural logarithm of total number of subsidiaries; *CATA* is the ratio of current assets to total assets; *QUICK* is the ratio of current assets, less inventories, to current liabilities; LEV is the ratio of long-term debt to total assets; *ROA* is the ratio of earnings before interest and tax to total assets; *FOREIGN* is the proportion of foreign subsidiaries; *OPINION* is 1 if client is given opinion other than standard unqualified audit report, 0 otherwise; *YEND* is 1 if the client's financial year is not ended on 30 June, 0 otherwise; *LLOSS* is 1 if the client report a loss in any of the last three years, 0 otherwise; *BIG4* is coded 1 if the client is audited by one of the Big 4 audit firms, 0 otherwise; *USLIST* is coded 1 if the company is listed in US under the American Deposit Receipt Level II, Level III, 0 otherwise.

Table 7: Results for audit fee model (H3)

Variables	Expected sign	Estimates	*t*-value	*p*-value
Intercept	?	2.154	56.867	0.000
LTAM	+	0.348***	50.916	0.000
LNSUB	+	0.237***	27.212	0.000
CATA	+	0.651***	20.851	0.000
QUICK	-	- 0.035***	-22.977	0.000
LEV	+	0.311***	4.507	0.000
ROA	-	- 0.177***	-8.335	0.000
FOREIGN	+	0.194***	8.367	0.000
OPINION	+	0.139***	6.544	0.000
YEND	-	0.048**	2.166	0.030
LLOSS	-	- 0.140***	-6.482	0.000
BIG4	+	0.448***	27.083	0.000
USLIST	+	0.958***	8.721	0.000
2006	?	0.127***	5.222	0.000
2007	**+**	**0.192*** **	**8.002**	**0.000**
2008	**+**	**0.270*** **	**11.607**	**0.000**
2009	**+**	**0.376*** **	**16.229**	**0.000**
Adjusted R^2=82.6% n=5491				

Reported *p*-values are two tailed for control variables and one tailed for the variables of interest. The variables of interest include *2007*, *2008* and *2009*. ***, ** and * denote significance at the 1%, 5% and 10% level, respectively. The dependent variable is natural logarithm of audit fees as measured in thousands of dollars. The independent variables are defined in Table 6 and as follows. *2006*, *2007*, *2008* or *2009* is coded one if the observation is from the corresponding year.

Table 8: Descriptive statistics for the variables in the audit report lag model (H4)

Variables	2005-2006	2007-2009	
	n=1928	n=3563	
	Mean (Standard deviation)	Mean (Standard deviation)	*t*-value (*p*-value)
ARL	78.614	78.168	0.812
	20.497	18.812	(0.417)
LTA	17.354	17.368	-0.248
	2.019	2.044	(0.804)
ROA	-0.153	-0.21	4.951***
	0.387	0.439	(0.000)
TLEV	0.322	0.292	4.298***
	0.246	0.246	(0.000)
SRTSUB	2.693	2.562	2.151**
	2.197	2.089	(0.032)
MIN	32%	36%	-3.390***
			(0.010)
LOSS	56%	63%	-5.173***
			(0.000)
GC	11%	17%	-6.163***
			(0.000)
OTHOP	3%	3%	0.827
			(0.408)
BIG4	54%	45%	6.746***
			(0.000)
BYEND	85%	88%	-3.449***
			(0.001)
ASW	9%	12%	-4.184***
			(0.000)

Reported *p*-values are two tailed. ***, ** and * denote significance at the 1%, 5% and 10% level, respectively. *LTA* is natural logarithm of total assets measured in dollars; *ROA* is the net profit divided by total assets; *TLEV* is total debt divided by total assets; *SRTSUB* is the square root of number of subsidiaries; *MIN* is coded 1 if the client is in mining industry, 0 otherwise; *LOSS* is 1 if the client report a negative earnings in the current year, 0 otherwise; *GC* is coded 1 if a going concern opinion is issued, 0 otherwise; *OTHOP* is 1 if a modified report is issued, 0 otherwise; *BIG4* is coded 1 if the client is audited by one of the Big 4 audit firms, 0 otherwise; *BYEND* is 1 if the client's financial year ended on 30 June, 0 otherwise; *ASW* is 1 if a client changed auditor during that year, 0 otherwise.

Table 9: Results for audit report lag model (H4)

Variable	Exp. Sign	Estimates	t-value	p-value
(Intercept)	?	116.945	31.934	0.000
LTA	-	-2.624***	-12.08	0.000
ROA	-	0.984	1.317	0.188
TLEV	+	2.981**	2.382	0.017
SRTSUB	+	0.822***	4.779	0.000
MIN	+	5.258***	9.249	0.000
LOSS	+	4.418***	6.320	0.000
GC	+	5.437***	7.247	0.000
OTHOP	+	4.436***	3.069	0.002
BIG4	-	-3.241***	-5.898	0.000
BYEND	+	1.044	1.414	0.157
ASW	+	1.484*	1.904	0.057
2006	?	0.088	0.110	0.913
2007	**+**	**-1.670**	**-2.101**	**0.018**
2008	**+**	**-0.475**	**-0.616**	**0.269**
2009	**+**	**-1.987**	**-2.592**	**0.005**

Adjusted R^2= 17.2% n=5491

Reported p-values are two tailed for control variables and one tailed for the variables of interest. Variables of interest include 2007, 2008 and 2009. ***, ** and * denote significance at the 1%, 5% and 10% level, respectively. The dependent variable is ARL, which is defined as the number of days between the fiscal year ends to issuance of audit report. The independent variables are defined in Table 8 and as follows; 2006, 2007, 2008 and 2009 are defined as 1 if an observation is from 2006, 2007, 2008 or 2009 respectively.