

DOES AUDIT QUALITY IMPROVE AFTER THE IMPLEMENTATION OF MANDATORY AUDIT PARTNER ROTATION?

Gary MONROE¹ and Sarowar HOSSAIN
University of New South Wales, Australia

ABSTRACT

We investigate whether audit partner tenure and audit quality associations remain significant after the implementation of mandatory audit partner rotation. Carey and Simnett (2006) report a significant negative association between long audit partner tenure and the propensity to issue qualified going-concern opinions for financially distressed companies. However, their study uses data from a period when there was no restriction on the length of audit partner tenure, i.e., from a period before there was mandatory audit partner rotation after a fixed period of time. We revisit this issue using Australian data from a period after the introduction of mandatory audit partner rotation. We find a significant positive association between audit partner tenure when tenure is five years or more and the likelihood of an auditor issuing a going-concern opinion for a financially distressed company. Our findings provide evidence that auditors are more likely to issue qualified going-concern opinions for financially distressed companies when there is mandatory audit partner rotation after a fixed period of time. Our findings suggest that the implementation of mandatory audit partner rotation has improved audit quality.

✉ going-concern opinion, audit partner tenure, distressed companies, mandatory rotation

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INTRODUCTION

Regulators and professional accounting bodies argue that lengthy auditor tenure is likely to reduce auditor independence, and therefore result in a lower quality audit (General Accounting Office-GAO, 2003; Institute of Chartered Accountants of

¹ Correspondence author: School of Accounting, Australian School of Business, University of New South Wales, NSW 2052, Australia, Tel: (+612) 9385 6443, E-mail: g.monroe@unsw.edu.au

England and Wales- ICAEW, 2002; Sarbanes-Oxley Act-SOX, 2002). In response to this concern, the Australian Corporate Law Economic Reform Program Act (2004) (hereafter CLERP 9) mandated lead audit partner rotation after five consecutive years (or up to seven consecutive years where the Australian Securities and Investments Commission (ASIC) has granted relief) effective from 1 July 2006. In addition, the audit partner cannot be re-appointed within the next two years.

The impact of the duration of auditor-client relationships on audit quality has received considerable attention in the auditing literature, with conflicting arguments (e.g., Mautz & Sharaf, 1961; Shockley, 1981; Lyer & Rama, 2004), as embodied in the auditor independence hypothesis and the auditor expertise hypothesis. The auditor independence hypothesis posits that audit quality is compromised as auditor tenure increases, based on three arguments: (1) over time, the auditor's incentives shift toward maintaining and profiting from the client and the audit, which can create an economic dependency (DeAngelo, 1981a, 1981b; Magee & Tseng, 1990; Raghunathan *et al.*, 1994); (2) as the auditor-client relationship lengthens, auditors might develop a "learned confidence" in the client that could result in the auditor not testing financial report assertions, anticipating results instead of being alert to anomalies, using less rigorous audit procedures or using static audit programs (e.g., Shockley, 1981; AICPA, 1992; Arrunada & Paz-Ares, 1997; Johnson *et al.*, 2002; GAO, 2003); and (3) a long auditor-client relationship could result in personal relationships (familiarity threat) so that truly independent auditor behavior becomes difficult (AICPA, 1992; Arel *et al.*, 2005).

The auditor expertise hypothesis contends that audit quality increases with auditor tenure, because information asymmetry between the client and the auditor reduces over time as auditors acquire client-specific knowledge. Because increased client-specific knowledge provides a comparative advantage in detecting material misstatements in financial reports, the lack of this knowledge in the early years of an audit engagement can result in a lower quality audit (e.g., Beck *et al.*, 1988; Geiger & Raghunandan, 2002). This argument applies to both individual auditors and the audit firm because individual auditors store information about the client in memory and the audit firm stores information about the client in audit work papers.

The new provisions for Australian companies are that lead (engagement) audit partner rotation occurs every consecutive five years and there is a cooling-off period of two years before an audit partner can be engaged again with the same client as a lead audit partner (CLERP 9).¹ Australia introduced CLERP 9 in order to increase auditor independence and audit quality. These changes relate to the argument that audit quality can be improved by increasing auditor independence, thus the law changes are motivated by the auditor independence arguments associated with auditor tenure. The argument supporting the regulatory changes is that audit partner rotation provides a 'fresh look' at a client's financial statement and changes the economic incentives of the auditor (CLERP 9).

Auditor tenure has two aspects: the tenure of individuals engaged in the audit, particularly the engagement partner, and the tenure of the audit firm. Both are examined in the literature but the focus is more on audit firm tenure because of difficulties in identifying the engagement partners in most countries. Empirical evidence regarding the effect of auditor tenure on audit quality supports both arguments, with studies finding that audit quality both increases and decreases as audit firm tenure increases (e.g., Johnson *et al.*, 2002; Myers *et al.*, 2003; Mansi *et al.*, 2004; Ghosh & Moon, 2005; Davis *et al.*, 2009; Carey & Simnett, 2006; Hamilton *et al.*, 2005; Chi *et al.*, 2009; Chen *et al.*, 2008; Fargher *et al.*, 2008; Chi & Huang, 2005). Some studies on audit partner tenure find a positive association between audit partner tenure and audit quality measured by discretionary accruals (e.g., Chi *et al.*, 2009; Chen *et al.*, 2010). Hence, the imposed mandatory partner rotation, which limits auditor partner tenure, can result in decreased audit quality. On the other hand, other studies find a negative association between audit quality and long audit partner tenure (e.g., Carey & Simnett, 2006; Hamilton *et al.*, 2005; Fargher *et al.*, 2008). Hence, the effects of audit partner rotation on audit quality are still inconclusive.

There is limited research on the effect of audit engagement partner tenure on audit quality because most jurisdictions do not require disclosure of the audit engagement partner. Manry *et al.* (2008), using a small sample of proprietary data for three large US audit firms, find that audit quality (proxied by discretionary accruals) increases with audit partner tenure over seven years for smaller clients. Using Taiwanese data for audits prior to the mandatory rotation of audit partners, Chi and Huang (2005) and Chen *et al.* (2008) find that audit quality (proxied by abnormal accruals) increases with audit partner tenure. Chi and Huang (2005) report that abnormal accruals are positively related to audit partner tenure. Using Australian data and short and long-term partner tenure indicator variables, Carey and Simnett (2006) find that longer audit partner tenure, i.e., more than seven years, is significantly and negatively associated with the likelihood of issuing a qualified going-concern opinion for a financially distressed company. Their findings indicate that long audit partner tenure impairs audit quality.

However, Carey and Simnett (2006) use data from a period when there were no restrictions on the length of audit partner tenure, i.e., from a period before mandatory audit partner rotation after a fixed period of time. Little is known about whether the mandatory audit partner rotation requirements have been effective in improving audit quality. Therefore, we revisit the issue addressed by Carey and Simnett (2006) and investigate whether the audit partner tenure and audit quality association that they found still exists in a mandatory audit partner rotation regime. Consistent with Carey and Simnett (2006), we use the propensity of auditors to issue going-concern opinions for financially distressed companies as a measure of audit quality. We regress long audit tenure against the type of audit opinion issued for financially distressed companies to test whether long audit partner tenure is

associated with audit quality. We find a significant and positive association between audit partner tenure at five years or more and the likelihood of issuing a going-concern opinion for a financially distressed company. Our findings suggest that the CLERP 9 regulatory changes on mandatory audit partner rotation have been effective in improving audit quality.

The remainder of our paper is organized as follows. Section 1 describes the relevant literature and hypothesis development. Section 2 outlines data selection and research design to test the hypotheses, followed by our findings in section 3. The last section provides discussion and conclusion of the study.

1. PRIOR RESEARCH AND HYPOTHESIS DEVELOPMENT

As discussed above, there are conflicting arguments about the effect of auditor tenure on audit quality. The auditor expertise argument is that audit quality is lower during the early years of the auditor-client relationship and increases with auditor tenure due to the reduction in information asymmetry between the auditor and the client. In contrast, the auditor independence argument is that as auditor tenure increases, an auditor's independence may become impaired and, as a result, auditors are more likely to accede to management's accounting and reporting choices. This implies that auditor quality decreases as auditor tenure increases.

Several studies examine the association between both audit firm and partner tenure and audit quality. Prior research supports both arguments, with studies finding that audit quality both increases and decreases as audit firm tenure increases. Some studies find a significant positive association between audit firm tenure and audit quality, thus supporting the auditor expertise hypothesis (e.g., Johnson *et al.*, 2002; Myers *et al.*, 2003; Mansi *et al.*, 2004; Ghosh & Moon, 2005; Chen *et al.*, 2008). In contrast, other studies find a significant negative association between these two constructs, thus supporting the auditor independence hypothesis (e.g., Davis *et al.*, 2009; Casterella *et al.*, 2004).

Using the absolute value of unexpected accruals and the persistence of working capital accruals, Johnson *et al.* (2002) find no evidence that longer audit firm tenure decreases financial reporting / audit quality. Alternatively, they report that financial reporting / audit quality is lower with short audit firm tenure. Myers *et al.* (2003) use the measures of discretionary accruals and current accruals as the proxies for audit or earnings quality and find evidence that earnings quality does not deteriorate with extended audit firm tenure under a voluntary auditor rotation system. They find that the magnitude of both measures of discretionary and current accruals declines with longer audit firm tenure. They also report that long term tenure is associated with both less extreme income increasing and less extreme income-decreasing accruals. Carcello & Nagy (2004) also support this argument as they report evidence that there is a lower level of audit quality in the early years of

the auditor-client relationship using fraudulent financial reporting as a proxy for audit quality. They find no evidence of higher instances of fraudulent financial reporting during long auditor tenure engagements. These studies support the argument that long auditor-client relationships enable auditors to improve audit quality by becoming more knowledgeable about the client and developing client-specific expertise.

Prior studies have also investigated capital market participants' perceptions of audit firm tenure and audit quality (Mansi *et al.*, 2004; Ghosh & Moon 2005). Mansi *et al.* (2004) examine the relation between auditor quality and audit firm tenure and the cost of debt financing using credit rating as a proxy for audit quality and report that bondholders require lower rates of return as the length of auditor tenure increases. Ghosh and Moon (2005) investigate how the investors and information intermediaries perceive audit firm tenure. They report that analysts are more likely to rely on reported earnings to predict future earnings with long audit firm tenure. This implies that earnings quality improves with longer auditor tenure. Moreover, their results show that independent rating agencies perceive that firms with longer auditor tenure provide more reliable financial information using stock rankings as a proxy for earning quality. Hence, these studies also support the positive relation from capital participants' view on audit quality and audit firm tenure.

In contrast, Davis *et al.* (2009) use discretionary accruals and forecast errors as proxies for audit quality and find that absolute value of discretionary accruals increases as auditor tenure increases and the absolute value of forecast errors declines with increases in auditor tenure. This is consistent with regulators' views that long-term auditor-client relationships impair auditor independence. Casterella *et al.* (2004) use fraudulent financial reporting as a measure for audit quality and find that fraudulent reports occur more when there is a long audit firm tenure. Hence, these studies argue that excessive familiarity resulting from a long auditor-client relationship decreases audit quality. Thus, the empirical evidence supports both sides of the argument.

Audit partner tenure can also affect audit quality. However, due to limited disclosure of the identity of the audit engagement partners because of legal requirements, studies on the effect of audit partner tenure on audit quality are limited. Most prior studies examine the Taiwan and Australian settings. However, consistent with audit firm tenure, the results for the relation between audit partner tenure and audit quality are mixed.

Three studies in Taiwan have examined the relation between partner tenure and audit quality (Chen *et al.*, 2008; Chi *et al.*, 2009; Chi & Huang, 2005). Both Chen *et al.* (2008) and Chi *et al.* (2009) find that audit quality deteriorates after partner rotation using discretionary accruals as a measure of earnings quality. Chen *et al.* (2008) use all nonfinancial companies included in the Taiwan Economic Journal database for the years 1990 to 2001 and find that both the absolute and positive

values of discretionary accruals decrease significantly as audit partner tenure increases. This is inconsistent with the belief that mandatory audit partner rotation enhances audit quality. Chi *et al.* (2009) further support Chen *et al.*'s (2008) result. They examine the effect of mandatory partner rotation on audit quality by using Taiwan firms' data from 2002 to 2004 and find that audit quality of companies in the mandatory rotation sample under new audit partners is lower than the audit quality of these same companies one year earlier when they have audited by old audit partners. Moreover, they report that there is no support for the concept that mandatory audit partner rotation enhances investor perceptions of audit quality, as the proxy earnings response coefficient (ERC) appears to be insignificant using Ghosh and Moon's (2005) ERC model.

In contrast, an Australian study supports the argument that long partner tenure decreases audit quality. Carey and Simnett (2006) use three measures as proxies for audit quality. These are the auditor's propensity to issue a going-concern opinion for distressed companies, the amount of abnormal working capital accrual and the extent to which key earnings targets are just beaten (missed). They find no evidence for an association between abnormal working capital accruals and long audit partner tenure. The results for the two other measures support a negative relation between long audit partner tenure and audit quality. The negative relation between the audit partner tenure and audit quality is consistent with the results of prior studies in examining audit firm tenure and audit quality (e.g., Davis *et al.*, 2009; Casterella *et al.*, 2004).

Using Australian data, Hamilton *et al.* (2005) show that audit partner changes during partner rotation are associated with lower signed unexpected accruals for Big 5 audit firms indicating the improvement of audit quality by audit partner rotation for Big 5 audit firms. Using discretionary accruals as a proxy for audit or earnings quality, Fargher *et al.* (2008) find audit partner rotation increases audit quality during the initial years of audit engagement.

These conflicting arguments and findings might be reconciled if the relation is non-linear, as indicated by some recent evidence that finds a quadratic relation between auditor tenure and various proxies for audit quality. Boone *et al.* (2008) find an inverted U relation between US audit firm tenure and the equity risk premium for a sample of Big 4 audit clients. Davis *et al.* (2009) find an inverted U relation between US audit firm tenure and the ability to meet or beat earnings forecasts. Chi and Huang (2005) report a U-shaped pattern between audit quality (proxied by discretionary accruals) and audit firm tenure for Taiwanese firms with a turning point of around 5 years. Using Australian data, Azizkhani *et al.* (2013) find that audit partner tenure has a non-linear relation with a firm's ex ante cost of equity capital for non-Big 4 audit engagements prior to the introduction of mandatory partner rotation requirements with a turning point of 7.9 years. They also report that partner rotation is associated with increased ex ante cost of equity capital. Given that the turning point reported in Azizkhani *et al.* (2013) is beyond the now

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mandatory rotation period of 5 years, it is unlikely that such a quadratic relation continues to exist.

Given the conflicting arguments and mixed empirical results, we propose the following non-directional hypothesis between audit partner tenure and audit quality:

H1: *There is a significant association between audit partner tenure and audit quality as measured by the propensity of auditors to issue going-concern opinions for financially distressed companies.*

2. RESEARCH METHOD

Sample selection

CLERP 9 legislated mandatory audit partner rotation after five years (or up to seven consecutive years where ASIC has granted relief) effective from 1 July 2006. Therefore, the first reflection of mandatory audit partner rotation is seen in the annual reports prepared for the financial period after 1 July 2006. Therefore, we use financial statement and audit opinion data for firms with a balance date after 1 July 2006 to 30 June 2010. Audit opinion and audit partner data are hand-collected from annual reports in the AspectHuntley DatAnalysis and Connect4 databases. Financial data are downloaded from the AspectHuntley FinAnalysis database. Consistent with Carey and Simnett (2006), we restrict the final sample to financially distressed companies. A company is identified as financially distressed if it reports a negative profit after tax or negative cash flows from operations during a given year. The sample size is further filtered because of missing data required for predicting going concern opinions. The final sample consists of 4,711 firm-year observations. Table 1 provides details of the sample selection.

Table 1. Sample selection

	Firm-year observations
Starting sample	7,196
Less: data not available	254
Less: non-distressed companies	2,231
Final sample	4,711

Model

To test whether there is a significant association between audit partner tenure and the propensity of auditors to issue going-concern opinions for financially distressed companies, we use the logistic regression model in Carey and Simnett (2006) for predicting going concern opinions:

$$\begin{aligned}
 GC = & \beta_0 + \beta_1 \text{TENURE} \geq 5 + \beta_2 \text{PBANK} + \beta_3 \text{SIZE} + \beta_4 \text{AGE} + \beta_5 \text{LEV} + \beta_6 \text{CLEV} \\
 & + \beta_7 \text{RETURN} + \beta_8 \text{LLOSS} + \beta_9 \text{INVESTMENTS} + \beta_{10} \text{BIG4} + \\
 & + \beta_{11} \text{FEERATIO} + \beta_{12} \text{CFFO} + \beta_{13} \text{MINING} + \beta_{14} \text{TENURE} \leq 2 + \\
 & + \beta_{15} \text{Year_Dummy} + \varepsilon \qquad (1)
 \end{aligned}$$

where

Dependent variable

GC = 1 if an auditor issues a going-concern opinion for a financially distressed company in the current year, and 0 otherwise;

Test variables

TENURE \geq 5 = 1 if audit partner tenure is greater than or equal to five years with the current auditee, and 0 otherwise;

Control variables

PBANK = probability of bankruptcy as measured by Zmijewski score;²

SIZE = natural logarithm of total assets of the company at financial year-end;

AGE = natural logarithm of the number of years since the company listed on the ASX;

LEV = total liabilities divided by total assets;

CLEV = change in LEV during the year;

RETURN = earnings before interest and taxes divided by total assets;

LLOSS = 1 if the company reported a loss for the previous year, and 0 otherwise;

INVESTMENTS = short and long-term investment securities (measured as current assets less debtors and inventory) divided by total assets;

BIG4 = 1 if audited by a Big 4 firm, and 0 otherwise;

FEERATIO = ratio of non-audit fees to total of audit and non-audit fees;

CFFO = cash flow from operations divided by total assets at the end of the fiscal year;

MINING = 1 if the company is in the mining industry, and 0 otherwise;

TENURE \leq 2 = 1 if audit partner tenure is less than or equal to two years, and 0 otherwise;

YEAR_Dummy = four dummy variables for five years of data.

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Our test variable for long audit partner tenure differs from that used in Carey and Simnett (2006). They defined long audit partner tenure as more than seven years, whereas we define long audit partner tenure greater than or equal to five years. Their sample period covers a time without mandatory audit partner rotation after a set period of time, with 28 (15) percent of their sample companies having audit partner tenure of more than five (seven) years. In contrast, our sample period covers a time with mandatory audit partner rotation after five years. As a consequence of the mandatory rotation requirement, 5.5 percent of the companies in our sample have audit partner tenure of five or more years, and only 0.42 (0.25) percent of the companies in our sample have audit partner tenure of more than five (seven) years.³ Therefore, we define long audit partner tenure as five or more years instead of the greater than seven years used in Carey and Simnett (2006).

Control variables used in the model are based on Carey and Simnett (2006). A high PBANK score indicates a higher probability of bankruptcy and we expect it to have a positive association with GC. We include SIZE because large companies are less likely to end up in bankruptcy (Carey and Simnett, 2006). AGE is included because older companies are more stable, while younger companies are more prone to failure (DeFond *et al.* 2002). Hence, we expect that SIZE and AGE will be negatively associated with the likelihood of receiving a going concern opinion. We include LEV and CLEV and expect them to have a positive association with GC because debt covenant violations are positively associated with the probability of issuing a going concern opinion (Mutchler *et al.*, 1997) and companies that are more leveraged are more likely to breach a debt covenant. CLEV captures movements in leverage that may shift companies to the condition of too much debt.

Companies that report consecutive losses are more likely to fail so we include LLOSS and expect it to have a positive association with GC. INVESTMENTS captures the ability of a company to raise cash and hence, high INVESTMENTS indicates high liquidity. We expect INVESTMENTS to have a negative association with GC. We include BIG4 to control for any audit quality differences between Big 4 and non-Big 4 auditors and expect it to have a positive association with GC. We include FEERATIO as suggested by Frankel *et al.* (2002) because it is associated with reduced audit quality. Low values for CFO are associated with a higher likelihood of financial distress and should increase the likelihood of receiving a going concern opinion (DeFond *et al.*, 2002). Therefore, FEERATIO and CFO are expected to have a negative association with GC. MINING is included because prior research finds that mining companies in Australia have different financial profiles (Butterworth and Houghton, 1995). Consistent with Carey and Simnett (2006) we also include TENURE_{≤2} to control for the possibility of lower audit quality during the first two years of the audit partner tenure because of higher levels of information asymmetry between the auditor and the client during the early years of the engagement.

3. RESULTS

Descriptive statistics

Table 2 provides the descriptive statistics for the variables used in the GC model. The average size of the sample company is \$1,337.481M and the average length of time the company has been listed on the ASX is 11.4 years. Auditors issued a going-concern opinion for 21.8 percent of the sample companies during the period of the study. Only 37.3 percent of the sample companies were audited by the Big 4 audit firms. This is lower than the percentage of listed companies audited by Big 4 auditors and probably reflects that the sample companies are smaller due to the financially distressed selection criteria.

Table 2. Descriptive statistics (N = 4,711)

Variables	Mean	Median	Std. Deviation
Total Assets (\$M)	1337.481	14.610	20724.360
AGE	11.376	8.000	9.796
GC	0.218	0.000	0.413
APTENURE	2.744	2.000	29.270
TENURE \geq 5	0.065	0.000	0.267
PBANK	-2.165	-3.000	6.317
SIZE	16.732	16.497	2.079
AGE	2.098	2.079	0.824
LEV	0.528	0.150	2.614
CLEV	1.757	0.052	30.164
RETURN	-0.432	-0.160	0.812
LLOSS	0.797	1.000	0.402
INVESTMENTS	0.365	0.274	0.305
BIG4	0.373	0.000	0.484
FEERATIO	0.141	0.047	0.187
CFFO	-0.252	-0.087	0.493
MININIG	0.408	0.000	0.491
TENURE \leq 2	0.619	1.000	0.486

GC = 1 if an auditor issues a going-concern opinion for a financial year, 0 otherwise; TENURE \geq 5 = 1 if audit partner tenure is greater than or equal to five years with the current auditee, 0 otherwise; PBANK = probability of bankruptcy as measured by Zmijewski score; SIZE = natural logarithm of total assets of the company at financial year-end; AGE = natural logarithm of the number of years since the company listed on the ASX; LEV = total liabilities divided by total

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assets; CLEV = change in LEV during the year; RETURN = earnings before interest and taxes divided total assets; LLOSS = 1 if company reported a loss for the previous year, and 0 otherwise; INVESTMENTS = short and long-term investment securities (measured as current assets less debtors and inventory) divided by total assets; BIG4 = 1 if audited by a Big 4 firm, and 0 otherwise; FEERATIO = ratio of non-audit fees to total fees paid to the incumbent auditor; CFFO = cash flow from operations divided by total assets at the end of the fiscal year; MINING = 1 if the company is in the mining industry, and 0 otherwise; TENURE \leq 2 = 1 if audit partner tenure is less than or equal to two years, and 0 otherwise; YEAR_Dummy = four dummy variables for five years of data.

Logistic regression results

Table 3 provide the results of the logistic regression analysis using the GC model. The regressions are clustered on firm and include year indicator variables to control for year fixed effects. The model is significant with a Pseudo R² of 0.158 (p <0.001).⁴ The results show that TENURE \geq 5 is significant and positively (p = 0.009, two-tailed) associated with the likelihood of issuing a going-concern opinion for a financially distressed company. The findings provide evidence that auditors are more likely to issue going-concern opinions for financially distressed companies when audit partner tenure is equal to or more than the mandated period. This is an indication of improved audit quality with longer audit partner tenure, opposite to the result reported in Carey and Simnett (2006).

Table 3. Logistic regression modelling the likelihood of a going concern opinion for financially distressed companies

Variables	Expected Sign	Coefficient (z-statistic)	p-value*
TENURE \geq 5	?	0.386 (2.610)	0.009
PBANK	+	0.083 (4.720)	<0.001
SIZE	-	-0.256 (-6.410)	<0.001
AGE	-	-0.104 (-1.790)	0.037
LEV	-	-0.079 (-3.490)	<0.001
CLEV	?	0.000 (0.020)	0.981
RETURN	-	0.088 (0.740)	0.461
LLOSS	+	0.535 (4.160)	<0.001

Variables	Expected Sign	Coefficient (z-statistic)	p-value*
INVESTMENTS	-	-2.333 (-11.150)	<0.001
BIG4	+	0.165 (1.540)	0.062
FEERATIO	-	-0.200 (-0.800)	0.211
CFFO	-	-0.682 (-4.280)	<0.001
MINING	?	-0.151 (-1.490)	0.137
TENURE _{≤2}	?	0.075 (0.850)	0.393
YEAR_Dummy		included	
Constant		3.685 (5.040)	<0.001
N		4,711	
Wald chi ²		308.28	
Prob > chi ²		<0.001	
Pseudo R ²		0.158	

* The p-value is for a two-tailed test for TENURE_{≥5} and control variables when there is no directional expectation, and a one-tail test for the control variables when there is a directional expectation. The results are clustered by firm and control for year fixed effects.

GC = 1 if an auditor issues a going-concern opinion for a financial year, 0 otherwise; TENURE_{≥5} = 1 if audit partner tenure is greater than or equal to five years with the current auditee, 0 otherwise; PBANK = probability of bankruptcy as measured by Zmijewski score; SIZE = natural logarithm of total assets of the company at financial year-end; AGE = natural logarithm of the number of years since the company listed on the ASX; LEV = total liabilities divided by total assets; CLEV = change in LEV during the year; RETURN = earnings before interest and taxes divided total assets; LLOSS = 1 if company reported a loss for the previous year, and 0 otherwise; INVESTMENTS = short and long-term investment securities (measured as current assets less debtors and inventory) divided by total assets; BIG4 = 1 if audited by a Big 4 firm, and 0 otherwise; FEERATIO = ratio of non-audit fees to total fees paid to the incumbent auditor; CFFO = cash flow from operations divided by total assets at the end of the fiscal year; MINING = 1 if the company is in the mining industry, and 0 otherwise; TENURE_{≤2} = 1 if audit partner tenure is less than or equal to two years, and 0 otherwise; YEAR_Dummy = four dummy variables for five years of data.

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Most of the control variables are significantly associated with GC in their expected directions. PBANK is significant and positively associated with GC ($p < 0.001$). Larger companies and older companies are less likely to receive a going-concern opinion. This is evidenced by significant and negative associations between SIZE ($p < 0.001$), AGE ($p = 0.037$) and GC. Big 4 auditors are more likely to issue a going concern opinion than a non-Big 4 auditor, as evidenced by the significant and positive association between BIG4 and GC ($p = 0.062$). Companies incurring a loss in the previous year (LLOSS) are more likely to receive a going concern opinion ($p < 0.001$). LEV ($p < 0.001$), CFFO ($p < 0.001$) and INVESTMENTS ($p < 0.001$) are significant and negatively associated with GC. The other control variables are not significantly associated with GC.

Sensitivity analyses⁵

If we modify our sample by including companies that are not financially distressed, or exclude companies in the mining or financial industry, our results (untabulated) are qualitatively similar to those reported in Table 3.

Although there are very few companies in our sample with audit partner tenure more than 7 years, we re-ran our analysis where, consistent with Carey and Simnett (2006), long audit partner tenure is defined as greater than seven years rather than greater than or equal to five years. The long audit partner tenure variable is not significant in this regression ($p = 0.101$). We also re-ran the analysis after defining long audit partner tenure as more than five years and the long audit partner tenure variable is not significant ($p = .0381$). This suggests that audit partner tenure of five years is driving our finding of a significant association between long audit partner tenure and audit quality. To confirm this, we performed a series of additional tests. First, we deleted $TENURE \geq 5$ from the original model and replaced it with two variables, $TENURE = 5$ (partner tenure equals five years) and $TENURE > 5$ (partner tenure is more than 5 years). Under this model, $TENURE = 5$ is positive and significant ($p = 0.006$) and $TENURE > 5$ is not significant ($p = 0.441$). Next, we deleted $TENURE \geq 5$ from the original model and replaced it with three variables, $TENURE = 4$ (partner tenure equals four years), $TENURE = 5$ (partner tenure equals five years) and $TENURE > 5$ (partner tenure is more than 5 years). Under this model, $TENURE = 4$ is not significant ($p = 0.241$), $TENURE = 5$ is positive and significant ($p = 0.034$) and $TENURE > 5$ is not significant ($p = 0.397$). This combination of tests confirms that audit partner tenure of five years is driving the significant and positive association between long audit partner tenure and audit quality for the results reported in Table 3. This result suggests that in their final year of the audit before rotation, the audit partners are very independent and audit quality is high. This could be because after five years on the engagement they are quite knowledgeable about the client and at the same time are less concerned about losing the client if they issue a going concern opinion as they will not be the engagement partner in the following year.

We also tested for a quadratic relation between audit partner tenure and audit quality by removing $TENURE \geq 5$ and $TENURE \leq 2$ from the original model and adding terms for audit partner tenure measured in years and a squared term for audit partner tenure. Our untabulated results indicate that the relation between audit partner tenure and audit quality is not a quadratic relation because the partner tenure squared term is not significant ($p = 0.741$).

DISCUSSION AND CONCLUSION

We revisit the issue of long audit partner tenure and audit quality using data from a period with mandatory audit partner rotation after five years (or up to seven consecutive years where ASIC has granted relief). We measure audit quality by the likelihood of issuing a going-concern opinion for a financially distressed company. An Australian study by Carey and Simnett (2006) finds a significant and negative association between long audit partner tenure and the likelihood of issuing a going concern opinion for a sample of financially distressed companies before mandatory audit partner rotation. We replicate Carey and Simnett (2006) using data from a period when there is mandatory audit partner rotation. In contrast to Carey and Simnett, we find a significant and positive association between long audit partner tenure and the likelihood of issuing a going-concern opinion for a financially distressed company. The results provide evidence of higher audit quality for longer audit partner tenure after the introduction of mandatory audit partner rotation.

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¹ Mandatory partner rotation has been adopted in many countries including Austria, Brazil, Greece, India, Italy, Israel, Singapore, South Korea, Taiwan, Spain and USA.

² Consistent with Carcello *et al.* (1995), the Zmijewski score is calculated as $PBANK = -4.803 - 3.6$ (net profit after tax divided by total assets) + 5.4 (total liabilities divided by total assets) – 0.1 (current assets divided by current liabilities).

³ These descriptive statistics indicate that partners are rotated either after five years on the engagement or earlier.

⁴ The maximum VIF value is 2.608, which indicates that multicollinearity is not a major concern for our model.

⁵ The results discussed in this sub-section are not formally tabulated – the details are available from the authors upon request.