

# Is audit quality Implied by Accruals Quality associated with Audit fees and Auditor Tenure? Evidence from China

**Kikhia Hassan & Albitar Khaldoon & Jin Ping Zhang**

School of Accounting and Finance, Zhongnan University of Economics and Law, Wuhan, China

E-mail: hassankh.2011@hotmail.com

## **Abstract**

*The Enron and Arthur Andersen scandal has raised concerns internationally about auditor independence and audit quality. Furthermore, the debate continues about the relationship between audit fees, auditor tenure and audit quality in spite of extensive empirical evidence examining audit failures and earnings management. Therefore, the purpose of current research is to determine the effect of audit fee and audit tenure both partially and simultaneously on the audit quality. Using a sample of Chinese firms, an environment where we believe it provides us with an opportunity to test whether the development of market and legal institutions affects the impact of audit fees and auditor tenure on audit quality. We employ the standard deviation of residuals from regressions relating current accruals to cash flows as proxy for audit quality. The paper documents statistically significant negative association between audit fees and audit quality. These findings are consistent with economic bonding being a determinant of auditor behavior rather than auditor reputational concerns. Further, the current paper shows a positive association between auditor tenure and audit quality in the earlier years of audit tenure. These results support the proposition that when the Learning Effect dominates the Bonding Effect in the earlier years of tenure, then audit quality is likely to be higher. Taken audit fees and audit tenure together, the results suggest that there is positive association between audit fees and audit quality in the earlier years of auditor tenure. Interestingly, the findings of our study have important implications for policymakers, auditors, multinational firms, and users of financial reports. As the rapid growth of China's economy gains global recognition, the Chinese stock market is capturing the attention of international investors. To a lesser extent, our paper also differs from the prior studies in methodology and findings in the investigation of audit quality.*

**Keywords:** Audit quality, accruals quality, audit fees, auditor tenure.

## **1. Introduction**

Due to corporate scandals as Enron and WorldCom in the United States, there has been an increasing focus on auditor independence (Chen, Lin & Lin, 2008). Last decade, the performance of auditors is criticized and auditors are often perceived to lack independence. This lack of auditor independence decreases the quality of the audit. However, when the audit gives reasonably assurance there is always room for mistakes and errors that can decrease the audit quality and mislead a third party in his/her decision. This raises the question of what is a high quality audit. The most used definition of audit quality is DeAngelo's (1981) which expresses the quality in terms of the auditor's competence and independence. The quality is then dependent on the probability that the auditor will both discover a breach and report that breach (DeAngelo, 1981). In other word, to increase the auditors' ability to detect questionable accounting practices it is important that the auditors and/or the audit firm are knowledgeable about the company and the industry. Furthermore, the auditors and/or audit firm ability to report these misstatements depend upon their independence from the client (Knechel, 2001). However, during the years after DeAngelo's definition of audit quality a number of studies regarding the audit quality has been performed with focus on a number of variables. Most of these studies have focused on the quality of the audit to see if they perform a low- or high quality audit. Jackson, Moldrich & Roebuck (2008) have studied audit quality from the perspective of mandatory audit firm rotation, Vanstraelen (2000) examines if a long-term audit mandate have an impact on audit quality. Yet other studies examines if auditor fees have an impact on audit quality (Hoitash, et.al., 2007).

We add to this literature by determining the effect of audit fee and audit tenure both partially and simultaneously on the audit quality in the Chinese capital market setting. China's unique institutional features provide us with an opportunity to test whether the development of market and legal institutions affects the impact of audit fees and audit tenure on audit quality. The reasons for choosing

the auditing area and more specifically if the audit fees and audit tenure have effects on audit quality are that it is an incompletely studied area. The above mentioned studies and also other studies that focus on audit quality provide ambiguous and inconclusive results.

Firstly, Fees paid to auditors can affect audit quality in two ways: large fees paid to auditors may increase the effort exerted by auditors, hence, increasing audit quality (Yuniarti, 2011). Alternatively, large fees paid to auditors, particularly those that are related to non-audit services, make auditors more economically dependent on their clients. Such financial reliance may induce a relationship whereby the auditor becomes reluctant to make appropriate inquiries during the audit for fear of losing highly profitable fees. Conversely, the potential for audit failure imposes significant economic costs on the auditor (DeAngelo, 1981; Simunic, 1984). Though a number of recent studies have examined the relationship between audit and non-audit fees and independence, they are ambiguous as to the relationship between audit fees and auditor behavior (Larcker and Richardson, 2004). They also differ on how fee composition and client importance affect auditor independence.

Secondly, the question of whether audit quality is affected by the length of time that an auditor serves a client has received extensive attention from researchers. According to Chen et al. (2008) "Regulators are concerned that as audit firm / partner tenure (the length of the auditor–client relationship) gets longer, auditors are more likely to compromise on their client's accounting and reporting choices because they are "too familiar" with the management and because they want to retain the client's business". In accounting literature, this is known as the 'familiarity threat'. Hence, there is argued that longer auditor tenure reduces the auditor's independence, and as a result the audit quality diminishes. On the contrary, it can be argued that as the auditor becomes more familiar with the client, he is better able to do an audit due to increased knowledge of the firm. The first years of auditing a new client involves start-up costs as a result of gaining sufficient understanding, as argued by DeAngelo (1991). The effects of this argument are opposed to the first, at least in the first years.

Furthermore, for audit quality proxy, Dechow and Dichev (2002) suggest a method of distinguishing informative accruals from no informative ones. They argue that when managers use discretionary accruals opportunistically, the current period accruals are less likely to be realized as future cash flows. In other words, the accrual quality measure, estimated as the association between current accruals and realized cash flows in the current as well as succeeding and previous years, deteriorates if the accruals are driven by opportunism, but not when they are motivated by the need to convey private information. Furthermore, the accrual quality measure is not subject to the criticism regarding the separation of discretionary and nondiscretionary accruals. On the basis of these considerations, we proxy audit quality by accrual quality. To sum up, ongoing interest in the issue suggests that this question has not been completely answered by extant research. In this paper, we provide additional insight into the debate by examining the impact of audit tenure, and audit fee both partially and simultaneously on the audit quality.

## **2. Literature Review and Hypotheses Development**

### **2.1. Audit fees and audit quality**

The link between audit fees and audit quality is suggested by the signalling or reputation hypothesis (Lindberg, 2001). Models of reputation capital suggest that sellers expend resources in order to build a reputation because buyers are unable to determine product quality before purchasing (Klein and Leffler, 1981). Several studies suggest that higher audit fees are associated with higher audit quality in order to compensate for the high-price of reputation (see Simunic, 1980; Ferguson and Stokes, 2002). Evidence suggests that audit clients are willing to pay a fee premium on these auditors' reputations in order to get a better quality of service (Simunic, 1980). In other study, Elitzur and Falk (1996) suggest that audit fees have a positive relationship with planned audit quality. They examine planned audit quality and audit fees in a multiperiod model. Ordinarily, higher audit fees might inspire auditors to increase the audit quality. Hoitash et al. (2007) also agree that higher audit fees will increase the auditor's effort and result in a higher audit quality. Conversely, Ashbaugh et al. (2003) find no association between firms' total fees and discretionary current accruals, nor any association between income increasing-accruals and client fees. Similarly, Chung and Kallapur (2003) find no association

between several audit-fee metrics and their estimate of discretionary accruals. In recent studies related to corporate governance, evidence suggests that lower audit fees could also be associated with a perceived higher audit quality. This is because the auditor might take into consideration that firms bound by a strong internal control environment will probably have a lower audit risk thus reducing the audit effort and audit fees by means of an effective internal corporate governance mechanism (Griffin et al., 2008; Krishnan and Visvanathan, 2009).

Furthermore, in their discussion of Kinney and Libby (2002) suggested that the threat to auditor independence could be as strong when the audit fee is large. Several studies that have empirically examined the relationship between audit quality and audit fee assume that audit services are quality-differentiated and that in a competitive market, quality differences are reflected in fees (Francis & Simon, 1987). Extending their sample to include all firms in China's stock market and employing several different measures of abnormal audit fees, Fang and Hong (2008) find a positive relationship between audit fees and audit opinion improvement. Chen, Su, and Wu (2005) also show that there is a positive correlation between a higher abnormal audit fee and an improvement in audit opinion. In their research, Frankel et al. (2002), report a significant negative association between audit fees and the probability of meeting their earnings benchmarks such as a small positive earnings surprise (0 to 1 cents) over the last available consensus median analyst forecast and a small increase in earnings (0 to 1 cents) over the last year's earnings. They also report a significant reduction in discretionary accruals when audit fee rank is high (see Frankel et al., 2002). However, it seems reasonable to suggest that increasing audit effort and therefore audit fees enable the auditors to get information and make judgments on the accrual estimation errors. Consequently, the auditor will require management to correct its estimates and modify its accounting methods to improve accrual quality and hence the audit quality. To sum up, the following hypothesis is suggested

*H1: There is a significant and positive relationship between audit fee and accruals quality and hence audit quality.*

## **2.2. Audit tenure and audit quality.**

After the accounting scandals of the last decade, the relationship between the auditor and the client is often scrutinized, resulting in questions about auditor independence. Mandatory audit firm rotation is recommended as a solution to improve the quality of financial reporting. This view is consistent with the argument that audit quality impairs when auditor tenure increases. A reduction in audit quality might occur, because auditors are more likely to agree with managers on important decisions as the length of the relationship between the auditor and the client increases (Chi and Huang 2005; Boone et al. 2008; Davis et al. 2009). This view is in line with the Bonding Effect explanation which related to auditor independence. However, the long-tenure association between the audit personnel/firm and the client may give rise to concerns about familiarity and self-interest threats to auditor independence. On other hand, earlier studies stress the negative impact of short tenure on audit quality in initial years of the auditor-client relationship (Geiger and Raghunandan 2002). However, the majority of the literature emphasizes the positive impact of long tenure on audit quality (Mansi et al. 2004; Ghosh and Moon 2005). This is consistent with the Learning Effect explanation that audit quality is low in the initial years as it takes time for the auditor to acquire the client-specific knowledge and audit quality increases as the auditor gets familiar with the client's business and information system. Furthermore, Solomon et al. (1999) document that as the length of the relationship between the auditor and the client increases, the auditor has more client-specific knowledge. As a consequence, it is less likely that the auditor relies on managerial estimates and becomes thus more independent of firms' management. Myers and Omer (2003) investigate the extent to which auditor tenure is associated with the distribution of both income-increasing and income decreasing accruals. They document that both income-increasing and income-decreasing accruals are lower when auditor tenure increases, suggesting that audit quality increases with auditor tenure.

A more recent paper and by using Chinese data, Firth, et. al., (2012) find that firms with mandatory audit partner rotations are associated with a significantly higher likelihood of a modified audit opinion than are no-rotation firms. Moreover, they find similar evidence for voluntary audit firm rotation, although the significance level is much weaker than for mandatory partner rotation. However, they do not find robust evidence that mandatory audit firm rotation is more effective than other forms of

auditor rotation in enhancing audit quality. Based on the description of the studies above, the empirical analyses provide conflicting results. However, the current study argues that when an auditor starts a new audit engagement, he would spend more time to learn about the entity's business and its environment (including its internal controls). At the same time, it would take some time for the auditor to develop a close relationship with the client. Hence, the Learning Effect is likely to dominate the Bonding Effect in the earlier years of the auditor-client relationship. In contrast, as the Learning Effect weakens over time, the Bonding Effect strengthens over time as the auditor and the client gets close to each other. The Bonding Effect would dominate the Learning Effect either when the Learning Effect reduces to zero or when the negative force from the Bonding Effect dominates the positive force from the Learning Effect. Therefore, the current study predicts that the Learning Effect is likely to dominate in the earlier years and the Bonding Effect is likely to dominate in the later years of auditor tenure. Therefore, we set the following hypothesis:

*H2: Audit quality is likely to increase in the earlier years of auditor tenure due to a Learning Effect and is likely to decrease in the later years of auditor tenure due to a Bonding Effect.*

### **2.3. Audit fees, Auditor Tenure and Audit quality**

Research indicates that in addition to the high set up costs, auditors face a steep learning curve in the initial years of an engagement. Caramanis and Lennox (2008) provide direct evidence that auditors expend more effort (i.e., audit hours) in the first years of an audit. However, as tenure lengthens, auditors acquire a more complete understanding of their client's operations. It follows that, all else constant, audit effort should decrease as tenure increases. Interestingly, however, audit fees generally increase with auditor tenure. Some recent studies examine the interaction between auditor tenure and either fees or auditor specialization. However, seemingly opposite conclusions are reached. One set of studies examines the interaction between auditor tenure and audit fees. Gul et al. (2007) find that nonaudit fees (but not audit fees) are associated with poorer audit quality in terms of higher discretionary current accruals for firms with short auditor tenure. In contrast, Stanley and DeZoort (2007) document that audit fees (but not nonaudit fees) are associated with improved audit quality in terms of lower likelihood of restatement for firms with short auditor tenure. Another set of studies examines the interaction between auditor tenure and auditor specialization, but results differ depending on the proxy for audit quality. Myers et al. (2003) find no such interaction with discretionary accruals. In contrast, using discretionary accruals and restatements as proxies for audit quality; other studies document this interaction (Gul et al. 2009).

However, for third hypothesis which related to the effect of auditor audit tenure and audit fee simultaneously on the audit quality, it is not easy to describe and measure service quality objectively with multiple indicators because service quality is an elusive and vague concept, thus, there is often an error in determining the nature and quality. With this in mind, we conjecture that when an auditor starts a new audit engagement he would spend more time to learn about the entity's business and it is also possible that the auditor may face special audit problems earlier in the tenure because of unfamiliarity with the client's business, and thus may lead the auditors to increase his efforts, and therefore audit fees, to get information and make judgments on the accrual estimation errors. However over time, the auditor and his client will get close to each other, therefore, the Bonding Effect is likely to dominate in the later years of auditor tenure, It follows that, all else constant, audit effort should decrease, and hence audit fees. Consequently, the auditor might become lax enough to allow more (and larger) estimation errors than he or she would otherwise allow. Therefore, economic bonding reduces accrual quality even if the auditor is competent to detect the errors. On the basis of prior discussion, we set the following hypothesis:

*H3: The positive association between accruals quality and audit fees in the earlier years of auditor tenure became negative in the later years.*

### **3. Auditing Profession in China**

The Chinese audit profession is managed by the Chinese Institute of Certified Public Accountants (CICPA) and the Ministry of Finance (MOF) of China, and is jointly regulated for capital market practices by the China Securities Regulatory Commission (CSRC) and the MOF. To reinforce the accountability of CPAs who issue audit reports, the Ministry of Finance released a supplementary

regulation on the signing and stamping CPAs' names on audit reports on July 2, 2001. This regulation, Notice of the Ministry of Finance on Related Issues of CPAs' Signature and Seal on Audit Reports, required that the audit report should be signed and sealed by two CPAs who are licensed to issue the related audit report and should be sealed by the accounting firm of the two CPAs. More specifically, the regulation requires that the signers should include the audit partner, chief CPA or an entrusted deputy chief CPA, who makes the final review of the audit, and another CPA who is in charge of the daily work on the audit. These two signing auditors are required to assume the same legal liabilities (unless one can prove the contrary).

On April 13, 2003, the Ministry of Finance issued a revised version of No. 7 Independent Audit Standards—Audit Report, which became effective on July 1, 2003. Similar to the original version, the revised version states that audit reports should be signed and sealed by CPAs, and also sealed by the accounting firm. In addition, the revised version provided a template for the audit reports, which indicated that two CPAs were required to sign and stamp their names. On February 15, 2006, the Ministry of Finance issued No. 1501 Audit Standards of Chinese CPAs—Audit Report to replace No. 7 Independent Audit Standards—Audit Report. This batch of audit standards became effective from January 1, 2007. With respect to the requirements on the signature and seal of CPAs on audit reports, it is identical to the prior audit standard revised in 2003. The specific requirements on who should sign and seal audit reports are still the same as set out in the Ministry's Notice that was issued in 2001. Thus, China has a relatively long history of requiring signatures of the two key auditors on an engagement.

## 4. Methodology

### 4.1. Sample and data collection

We begin to select sample firms from China Stock Market & Accounting Research Database (CSMAR), which is widely used by many prior studies (e.g., Giannetti, Liao, and Yu, 2014). CSMAR database provides us with the data including audit fees of auditing the annual financial statements, the names of CPAs who signed the audit report, and the name of the audit firm, and the number of years as auditor with a current client, from all companies listed on both the Shanghai Stock Exchange and the Shenzhen Stock Exchange. Our raw sample includes 14334 observations during the period of 2007-2013. We start from 2007 because China's Ministry of Finance issued new basic standards (namely Ministry of Finance's 33 Action) for enterprise accounting in 2006, which were enforced from January 2007. Therefore, our sample starts from this year in order to keep consistence between cross-sectional data. Furthermore, in the calculation of the proxy for audit quality, we need related data during the five-year period between  $t-4$  and period  $t$  (in order to keep sample, we don't require the five year period to be consecutive). In this way, we get 6993 firm year observations whose proxy for audit quality is available from 2009-2013. Combing with data of audit tenure, audit fees and other control variables and dropping observations that lack the necessary data for estimating our models, our final data set contains 6957 observations (1318;1340;1411;1451;1437 observations in 2009-2013, respectively).

### 4.2. Empirical model

**First:** Measure of audit quality

Dechow and Dichev (2002) argue that uncertainty in accruals can best be measured by the extent to which working capital accruals map into cash flow realizations. The key insight to their model is that accruals quality is affected by measurement error in accruals, irrespective of management's purpose (e.g. imposing intentional or unintentional errors in the estimation of accruals). According to Francis et al. (2005) and from a practical perspective, the Dechow and Dichev (D&D) model is limited to current accruals (because of the long lead/lags between noncurrent accruals and ultimate cash flow realizations). Thus, consistent with McNichols (2002), they augment the D&D model by incorporating the fundamental variables included in the modified Jones model. This augmented model produces a better specified expectations model and, therefore, a better set of residuals. Following Francis et al. (2005), we estimate a cross-sectional accrual model as depicted in the following equation:

$$TCA_t = \beta_0 + \beta_1 OCF_{t-1} + \beta_2 OCF_t + \beta_3 OCF_{t+1} + \beta_4 \Delta REV_t + \beta_5 PPE_t + v_t \quad (1)$$

Whereas; *TCA* is total current accruals are calculated as (change in current assets – change in cash – (change in current liabilities – change in short-term debt included in current liabilities)), *OCF* is Operating cash flow obtained from cash flow statements, *ΔREV* is Changes in sales revenues, and *PPE* is gross values of property, plant and equipment. Consistent with Francis et al. (2005) we estimate equation (1) separately for each Fama and French (1997) industry group in year *t*. We winsorize the 1 percent extreme values from each tail and use the residual from equation (1) as our estimate for abnormal accruals. Subsequently, we use the estimated firm year residual during the five-year period between *t* - 4 and period *t* and calculate the standard deviation of these residual. In turn, we term the calculated standard deviation and use it as our proxy for accruals quality. A large standard deviation implies that discretionary accruals vary over time yielding low-accrual quality.

**Second:** Audit Quality and Audit Fees model.

Previous studies have modeled fees as a function of size, risk, complexity, auditor type and profitability. Our fee prediction model draws on Simunic (1984), Larcker and Richardson (2004) and Hay et al. (2006). However, in order to study the relationship between audit fees and audit quality proxy by accruals quality and as in Srinidhi and Gul (2007), we model AQ as a function of the fee variables and other determinants

$$AQ = \beta_0 + \beta_1 AF + \beta_2 LNNTA + \beta_3 ROA_t + \beta_4 LOSS + \beta_5 BIG4 + \beta_6 SUBS + \beta_7 FOREIGN + \beta_8 LEV + industry\ dummies + year\ dummies + ut.....(2)$$

Whereas, *AF* is natural log of total audit fees paid to the auditor, *LNNTA* is the natural log of the firm's total assets, *LOSS* is An indicator variable equal to one if the audit client reported negative net income in either of the two previous fiscal years (zero otherwise), *BIG4* is An indicator variable equal to one when the auditor is a member of the BIG4 (zero otherwise), *FOREIGN* is an indicator variable equal to 1 if the company has foreign operations (zero otherwise), *LEV* is total liabilities to total assets ratio.

**Third:** Audit Quality and Audit Tenure model.

In order to test the second hypothesis, the current study runs an OLS pooled regression on the following model:

$$AQ = \beta_0 + \beta_1 T + \beta_2 T^2 + \beta_3 LNNTA + \beta_4 ROA_t + \beta_5 LOSS + \beta_6 BIG4 + \beta_7 FOREIGN + \beta_8 LEV + industry\ dummies + year\ dummies + ut....(3)$$

Whereas, *T* is the number of consecutive years that a firm has retained the auditor, *T<sup>2</sup>* is the square of *T*, *LNNTA* is the natural log of the firm's total assets; *ROA* is Return on assets defined as net income divided by total Assets, *LOSS* is an indicator variable equal to one if the audit client reported negative net income in either of the two previous fiscal years (zero otherwise); *BIG4* is an indicator variable equal to one when the auditor is a member of the BIG4 (zero otherwise); *FOREIGN* is an indicator variable equal to 1 if the company has foreign operations (zero otherwise), *LEV* is total liabilities to total assets ratio, however, this equation includes control variables based on prior literature (Dechow and Dichev, 2002; Myers et. al., 2003; Krishnan, 2003; Reichelt and Wang, 2010).

Note that higher AQ indicates higher audit quality. Hence, to test the second hypothesis, we test whether the coefficient  $\beta_1$  on *T* is positive, and the coefficient  $\beta_2$  on *T<sup>2</sup>* is negative, indicating that audit quality increases in the earlier stage of auditor tenure and decreases in the later stage of auditor tenure. In addition, in my sensitivity tests, I also use alternative measures of auditor tenure to test the robustness of my results.

**Fourth:** Audit Tenure, Audit fees and Audit Quality model.

$$AQ = \beta_0 + \beta_1 AF + \beta_2 AF*T + \beta_3 AF*T^2 + \beta_4 LNNTA + \beta_5 ROA_t + \beta_6 LOSS + \beta_7 BIG4 + \beta_8 FOREIGN + \beta_9 LEV + industry\ dummies + year\ dummies + ut.....(4)$$

## 5. Empirical Results

### 5.1. Descriptive statistics

**Table 3 Descriptive statistics**

variable	N	Mean	Median	1st Quartile	3st Quartile	Min	Max	Std Dev.
<b>AQ</b>	6993	0.0900	0.0700	0.0400	0.110	0	0.700	0.0700
<b>AF</b>	6993	13.32	13.22	12.90	13.59	12.21	15.52	0.610
<b>T</b>	6993	2.480	2	1	3	1	7	1.600
<b>T2</b>	6993	8.720	4	1	9	1	49	10.87
<b>LNTA</b>	6993	21.72	21.53	20.78	22.44	0	30.57	1.530
<b>ROA</b>	6993	0.0400	0.0400	0.0100	0.0700	-0.260	0.250	0.0700
<b>LOSS</b>	6993	0.0900	0	0	0	0	1	0.290
<b>Big4</b>	6993	0.0500	0	0	0	0	1	0.220
<b>FOREIGN</b>	6993	0.470	0	0	1	0	1	0.500
<b>Lev</b>	6993	0.480	0.470	0.290	0.640	0.0400	1.610	0.260

Table 1 summarizes the descriptive statistics for accrual quality and other variables used in this study. The mean (median) of AQ is 0.0900 (0.0700). The average total fees are 13.32. The average tenure (T) is 2.4 years with a minimum of 1 year and a maximum of 7 years whereas the minimum and maximum values of the square of auditor tenure ( $T^2$ ) are 1 and 49, respectively. The mean (median) of Size of the firm is 21.72 (21.53). Big 4 international accounting firms audit only 5% of the sample companies, which is very different from the audit market structure of the more developed capital markets (such as the U.S., Australia, or Taiwan). Most of the continuous control variables have an approximately symmetric distribution.

	AQ	AF	T	T2	LNTA	ROA	LOSS	Big4	FOREIGN	Lev
<b>AQ</b>	1									
<b>AF</b>	- 0.064***	1								
<b>T</b>	- 0.056***	0.195***	1							
<b>T2</b>	- 0.049***	0.197***	0.967***	1						
<b>LNTA</b>	- 0.117***	0.701***	0.173***	0.172***	1					
<b>ROA</b>	- 0.041***	0.025***	- 0.054***	- 0.052***	0.013	1				
<b>LOSS</b>	0.071***	- 0.058***	0.014*	0.016**	- 0.123***	- 0.642***	1			
<b>Big4</b>	- 0.078***	0.413***	0.094***	0.096***	0.411***	0.008	- 0.025* **	1		
<b>FOREIGN</b>	- 0.093***	0.018**	0.007	0.004	0.002	0	-0.012	- 0.017* *	1	
<b>Lev</b>	0.170***	0.200***	0.069***	0.070***	0.241***	- 0.372***	0.250* **	0.100* **	- 0.093* **	1

## 5.2. Univariate analysis

Table 2 reports the correlations among the variables in the regression. Audit fees are positively correlated with audit tenure and the square of audit tenure. We observe a negative and significant correlation between audit fees and our measure of accruals quality (AQ). These results suggest that higher fees are associated with higher audit. Notably, our measure of accruals quality is negatively correlated with auditor tenure  $T$  and the square of auditor tenure  $T^2$ , suggesting that longer tenure is associated with higher audit quality, consistent with prior literature. It is not surprising that auditor tenure and firm size are highly correlated (0.195\*\*\*), so are the  $T$  and the square of auditor tenure  $T^2$  and firm size (0.197\*\*\*). The significant results in later regression analyses indicate that the multicollinearity between auditor tenure and firm age is not a problem.

However, care needs to be exercised when interpreting the Pearson correlation coefficients; this is because they cannot provide a reliable indicator of the association in a manner that controls for additional explanatory variables (Pallant, 2001). Therefore Tests were performed for detecting the level of collinearity among the independent variables in the mode for detecting the multicollinearity among the independent variables in the model. The Multicollinearity was tested by finding the variance inflation factor values for independent variables relevant to the model. The values of the variance inflation factor greater than 10 and tolerance factor closer to zero will show the presence of Multicollinearity in the audit fees model. The result shows no signs of Multicollinearity in the models

## 5.3. Empirical Analysis

This section discusses the results from the tests of my hypotheses presented in the third section of our study. We first present the results of the relation between auditor fees and audit quality. Next, the current study discusses the results on the impact of auditor tenure on audit quality. We end this section with the results on the effect of audit fees and audit tenure both simultaneously on audit quality.

### 5.3.1. The Impact of Audit fees on audit quality implied accruals quality

In this section, we examine the relation between audit fees and audit quality. As described in previous sections, we employ the accruals quality measured by standard deviation of the residual (AQ) as the proxy for audit quality. We posit that a positive association between audit fees and audit quality, therefore, negative relationship between audit fees and the proxy for audit quality (AQ). This assumption is consistent with economic bonding rather than auditor reputation concerns.

We observe that audit fees are significant and positively related to the proxy which has been used for audit quality AQ; i.e. the higher the total audit fees the lower the quality. Audit fee is found to be positively related to our proxy of audit quality at 10% significance level ( $\beta = -0.024$ ,  $p < 0.10$ ). This association is significant and inconsistent with the univariate results presented in the previous section. The coefficients on the control variables are, by and large, also consistent over time. These results provide evidence in support of the view delineated above and those suggested in Kinney and Libby (2002); i.e. that economic bonding between clients and incumbent auditors can be empirically discerned by segregating the unexpected portion of the total fees. Furthermore, the presented result is inconsistency of the view of several studies which suggest that higher audit fees are associated with higher audit quality in order to compensate for the high-price of reputation (see Simunic, 1980; Ferguson and Stokes, 2002). It can be concluded that the first hypothesis (H1) is rejected, meaning that audit fee has significant effect on audit Quality, but The influence of audit fee on audit quality is negative, which means that the higher audit fee, the lower the audit quality is. The results are inconsistent with a research conducted by Yuniarti (2011) and Venkataraman, Weber and Willenborg (2008) which state that audit fee affect the audit quality. However, the results consistent with studies conducted by Sundgren and Tobias (2011) which state the audit fee have a negative impact on audit quality.



**Table 3 Regression Analysis  
The Impact of Audit fees on Audit Quality**

$$AQ = \beta_0 + \beta_1 AF + \beta_2 LNTA + \beta_3 ROA_t + \beta_4 LOSS + \beta_5 BIG4 + \beta_6 SUBS + \beta_7 FOREIGN + \beta_8 LEV + \text{industry dummies} + \text{year dummies} + u_t$$

Variable Name	Coeff.	T-statistic	P-value
<b>Constant</b>	0.120***	4.27	0.0000
<b>AF</b>	0.024*	1.82	0.0690
<b>LNTA</b>	-0.059***	-9.77	0.0000
<b>ROA</b>	-0.080***	4.9	0.0000
<b>LOSS</b>	0.010***	3.12	0.0020
<b>Big4</b>	-0.025***	-3.43	0.0010
<b>FOREIGN</b>	-0.016*	-1.84	0.0660
<b>Lev</b>	0.056***	15.26	0.0000
<b>Year</b>	<b>YES</b>		
<b>Industry</b>	<b>YES</b>		

Number of Observations= 6578

T-statistics in parentheses , \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

R-squared = 0.412

Adjusted R-squared = 0.408

F statistic = 16.11

AF = natural log of total audit fees paid to the auditor;

LNTA = the natural log of the firm's total assets;

ROA =Return on assets defined as net income divided by total Assets;

LOSS = An indicator variable equal to one if the audit client reported negative net income in either of the two previous fiscal years (zero otherwise);

BIG4 = is An indicator variable equal to one when the auditor is a member of the BIG4 (zero otherwise);

FOREIGN = an indicator variable equal to 1 if the company has foreign operations (zero otherwise);

LEV = total liabilities to total assets ratio.

### 5.3.2. The Impact of Auditor tenure on audit quality implied accruals quality

Table 4 presents the results of model (3) testing the auditor tenure effects. The regression results for the full sample do indicate significant coefficients for audit tenure  $T$ , but don't indicate significant coefficients for the square of audit tenure  $T^2$ . However, the negative relation between  $T$  and  $AQ$  (the coefficient on  $T$  is -0.014) indicates that accrual quality improves as tenure lengthens. As predicted, the coefficient on  $T^2$  is positive (0.004), but its insignificant. The statistically significant negative sign on  $T$  suggesting that accrual quality initially increases with tenure at the early stage but there is no evidence supports that at later decreases with tenure at the later stage. One could draw the conclusion that the Learning Effect is likely to dominate the Bonding Effect in the earlier years of the auditor-client relationship. Even though the business environment is dynamic and constantly changing, the incremental information to learn over time tends to decrease and evens out at a certain point. The result for earlier years is consistent with Jackson et al. (2007) which state that the audit tenure can provide auditor a better understanding of his clients, thus increasing audit quality. However, over the time, the insignificant coefficient of the square of audit tenure  $T^2$  don't support our second

hypothesis: One possible explanation for such result that our study's period is only for five years, in such short period, we can't discover long term effect.

<b>Table 4 Regression Analysis</b>			
<b>The Impact of Auditor tenure on Audit Quality</b>			
$AQ = \beta_0 + \beta_1 T + \beta_2 T^2 + \beta_3 LNTA + \beta_4 ROA_t + \beta_5 LOSS + \beta_6 BIG4 + \beta_7 FOREIGN + \beta_8 LEV + \text{industry dummies} + \text{year dummies} + ut$			
Variable Name	Coeff.	T-statistic	P-value
<b>Constant</b>	0.151***	6.06	0.0000
<b>T</b>	-0.014**	-2.06	0.0400
<b>T<sup>2</sup></b>	0.004	1.14	0.2530
<b>LNTA</b>	-0.062***	-11.80	0.0000
<b>ROA</b>	-0.083***	5.25	0.0000
<b>LOSS</b>	0.009***	3.00	0.0030
<b>Big4</b>	-0.032***	-3.16	0.0020
<b>FOREIGN</b>	-0.014**	-2.14	0.0320
<b>Lev</b>	0.057***	16.02	0.0000
<b>Year</b>	<b>YES</b>		
<b>Industry</b>	<b>YES</b>		

Number of Observations= 6,957  
T-statistics in parentheses , \*\*\* p<0.01, \*\* p<0.05, \* p<0.1  
R-squared = 0.388  
Adjusted R-squared = 0.372  
F statistic = 17.33

---

T = the number of consecutive years that a firm has retained the auditor;  
T<sup>2</sup> = the square of T;  
LNTA = the natural log of the firm's total assets;  
ROA =Return on assets defined as net income divided by total Assets;  
LOSS = An indicator variable equal to one if the audit client reported negative net income in either of the two previous fiscal years (zero otherwise);  
BIG4 = is An indicator variable equal to one when the auditor is a member of the BIG4 (zero otherwise);  
FOREIGN = an indicator variable equal to 1 if the company has foreign operations (zero otherwise);  
LEV = total liabilities to total assets ratio.

### 5.3.3. The Impact of audit fees and audit tenure simultaneously on audit quality

With regard to Model 4 that includes only audit fees AF and audit tenure AF\*T and AF\*T<sup>2</sup>, we observe significant and negative coefficients between our proxy of audit quality AQ and AF\*T, but on other hand, we observe insignificant positive coefficient between AQ and AF\*T<sup>2</sup>. However, the negative and significant coefficient of AF\*T (-0.031\*\*) enhances the notion that when an auditor starts a new audit engagement he would spend more time to learn about the entity's business and it is also possible that the auditor may face special audit problems earlier in the tenure because of unfamiliarity with the client's business, and thus may lead the auditors to increase his efforts, and therefore audit fees, to get information and make judgments on the accrual estimation errors, therefore, we observed higher audit quality in the earlier years of the auditor-client relationship. On the contrary,

the insignificant confection of  $AF \cdot T^2$  don't support our third hypothesis which suggest the in the later years of auditor tenure there is negative relationship between audit fees and audit quality.

<b>Table 5 Regression Analysis</b>			
<b>The Impact of audit fees and audit tenure simultaneously on audit quality</b>			
$AQ = \beta_0 + \beta_1 AF + \beta_2 AF \cdot T + \beta_3 AF \cdot T^2 + \beta_4 LNTA + \beta_5 ROA + \beta_6 LOSS + \beta_7 BIG4 + \beta_8$ $FOREIGN + \beta_9 LEV + \text{industry dummies} + \text{year dummies} + ut$			
Variable Name	Coeff.	T-statistic	P-value
<b>Constant</b>	0.055***	4.36	0.0000
<b>AF</b>	0.026**	2.1	0.0360
<b>AF*T</b>	-0.031**	-2.08	0.0370
<b>AF*T<sup>2</sup></b>	0.007	1.11	0.2670
<b>LNTA</b>	-0.055***	-9.82	0.0000
<b>ROA</b>	-0.078***	4.82	0.0000
<b>LOSS</b>	0.010***	3.07	0.0020
<b>Big4</b>	-0.035***	-3.22	0.0010
<b>FOREIGN</b>	-0.013*	-1.84	0.0650
<b>Lev</b>	0.055***	15.05	0.0000
<b>Year</b>	<b>YES</b>		
<b>Industry</b>	<b>YES</b>		

Number of Observations= 6578  
T-statistics in parentheses , \*\*\* p<0.01, \*\* p<0.05, \* p<0  
R-squared = 0.453  
Adjusted R-squared = 0.439  
F statistic = 15.92

---

AF = natural log of total audit fees paid to the auditor;  
T = the number of consecutive years that a firm has retained the auditor;  
T<sup>2</sup> = the square of T;  
LNTA = the natural log of the firm's total assets;  
ROA =Return on assets defined as net income divided by total Assets;  
LOSS = An indicator variable equal to one if the audit client reported negative net income in either of the two previous fiscal years (zero otherwise);  
BIG4 = is An indicator variable equal to one when the auditor is a member of the BIG4 (zero otherwise);  
FOREIGN = an indicator variable equal to 1 if the company has foreign operations (zero otherwise);  
LEV = total liabilities to total assets ratio.

## 6. Conclusion

This study was conducted to determine the effect of audit fee and audit tenure on audit quality either partially or simultaneously in the Chinese capital market setting. One important characteristic of China's reforms is the very uneven economic and legal development across the country. We believe that the differences in regional development can have profound effects on auditing (including audit quality). Using Chinese data and the standard deviation of residuals from regressions relating current accruals as proxy for audit quality, we document a negative effect of audit fees on audit quality and this result is consistent with economic bonding being a determinant of auditor behavior rather than auditor reputational concerns. However, for audit tenure and audit quality we propose that audit

quality is likely to increase with audit firm tenure due to a Learning Effect and decrease with audit firm tenure due to a Bonding Effect. The results support our argument that in the earlier years of audit tenure when the Learning Effect dominates Bonding Effect, then the audit quality will be higher. However, we fail to find significant relationship between audit tenure and audit quality in the later years due to shorthand of study's period. Furthermore, taking audit fees, audit tenure and audit quality together, we find positive association between audit fees and audit quality in the earlier years of auditor tenure.

The findings of our study have important implications for policymakers, auditors, multinational firms, and users of financial reports. As the rapid growth of China's economy gains global recognition, the Chinese stock market is capturing the attention of international investors. One important question that international institutional investors who enter the Chinese stock market must consider is whether the auditors and related arrangements play an effective role in mitigating information asymmetry. Given that other transitional and emerging markets exhibit some similar characteristics to China (e.g., poor legal and market infrastructure); our results may have some resonance for these countries. Furthermore, this study sheds some light on the debate about the boundaries of securities regulation. Many scholars support the helping hand theory of regulation, which argues that regulation by means such as mandatory audit rotation is beneficial, because it protects investors and promotes the growth of markets by increasing the supply of reliable information. Furthermore and importantly, our findings suggest that high audit fees do not always correlate with high audit quality. This has implications for academic research that uses audit fees as a proxy for audit quality or earnings quality. For audit fees literature, the present study indicates that the relationship between audit fees and accruals quality depends on the time period examined and the length of auditor tenure.

Our study is subject to a number of limitations. First, to simplify our empirical analysis, we assume a quadratic model correctly captures the true relation between auditor tenure and audit quality. However, future research may refine this simplified model and assumption. Second, this study relies on accrual quality to measure the audit quality. Using accruals might be a noisy proxy and thus, the measurement error associated with any estimation model may still drive my results. Third, our sample spans a timeframe consumed by regulatory changes and we only include audit fees in our empirical analysis to address the relationship between audit fees and audit quality due to the data constraints we couldn't find non-audit fees data. Fourth, perceived audit quality is vital for the efficient allocation of limited resources in the capital market. Therefore, whether my results extend to perceived audit quality also merit the consideration of future research. Finally, the audit committee takes on critical responsibility in ensuring the quality of financial reporting and the hiring and monitoring of auditors. Thus, without considering the effect of the audit committee, this study may have a correlated omitted variable problem. Therefore, it is worthwhile for future research to explore the role that the audit committee plays in the relation between auditor tenure and audit quality. Thus, we defer further investigation of this limitation to future research.

## References

- Boone, P., Khurana, K., & Raman, K. (2008). Audit Firm Tenure and the Equity Risk Premium. *Journal of Accounting, Auditing & Finance*, 23 (1): 115-140.
- Chi, W., & Huang, H. (2005). Discretionary Accruals, Audit-firm Tenure and Audit-partner Tenure: Empirical Evidence from Taiwan. *Journal of Contemporary Accounting and Economics* 1: 65-92.
- Chen, C., Lin, C., & Lin, Y. (2008). Audit Partner Tenure, Audit Firm Tenure, and Discretionary Accruals: Does Long Auditor Tenure Impair Earnings Quality? *Contemporary Accounting Research*, 25(2): 415 – 445.
- DeAngelo, E. (1981). Auditor Size and Audit Quality. *Journal of Accounting and Economics*, 3, 183-199.

- Davis, R., Soo, S., & Trompeter, M. (2009). Auditor Tenure and the Ability to Meet or Beat Earnings Forecasts, *Contemporary Accounting Research*, 26: 517-548.
- Dechow, P. & Dichev, I. (2002). The quality of accruals and earnings. *The Accounting Review*, 77( Supplement):35-59.
- Elitzur R. & Falk, H. (1996). Planned audit quality. *Journal of Accounting and Public Policy*, 15(1): 247-269.
- Firth, M., Rui, O. & Wu, X. (2012). How Do Various Forms of Auditor Rotation Affect Audit Quality? Evidence from China. *The International Journal of Accounting*, 47 (2012): 109–138
- Fama, E. & French, K. (1997). Industry costs of equity. *Journal of Financial Economics*, 43(2):153-93.
- Fan, J., Tak, W., & Tianyu Z. (2007). Politically connected CEOs, corporate governance, and post-IPO performance of china's newly partially privatized firms. *Journal of Financial Economics*, 84:330-357.
- Francis, J., LaFond, R., Olsson, P. & Schipper, K. (2005). The market pricing of accruals quality. *Journal of Accounting and Economics*, 39(1):295-327.
- Fang, X., & Hong, Q. (2008). Abnormal audit fees and their damage to audit quality. *China Accounting Review* 6: 425-442.
- Francis, R., & Simon, D. (1987). A test of audit pricing in the small- client segment of the USA. *Audit Market. The accounting review*, 62 (1): 142-157.
- Ferguson, A., & Stokes, D., (2002). Brand name audit pricing, industry specialisation and leadership premiums post Big 8 and Big 6 mergers. *Contemporary Accounting Research*, 19:77-100.
- Ghosh, A., & Moon, D. (2005). Auditor Tenure and Perceptions of Audit Quality. *Accounting Review* 80:585-612.
- Geiger, M. A., and K. Raghunandan, 2002. Auditor Tenure and Audit Reporting Failures. *Auditing: A Journal of Practice & Theory*, 2(1): 67-78
- Griffin, A., Lont, D., & Sun, Y. (2008). Corporate governance and audit fees: Evidence of countervailing relations. *Journal of Contemporary Accounting & Economics*. 4(1):18-49.
- Giannetti, M., Guanmin, L., & Xiaoyun, Y. (2014). The brain gain of corporate boards: Evidence from china. *Journal of Finance*, 6(August):1-27.
- Caramanis, C., & Lennox, C. (2008). Audit effort and earnings management. *Journal of Accounting and Economics*, 45: 116–138.
- Gul, F., Jaggi, B., & Krishnan, G. (2007). Auditor independence: Evidence on the joint effects of auditor tenure and non-audit fees. *Auditing: A Journal of Practice and Theory*, 26 (2): 117–42.
- Gul, F., Fung, Y., & Jaggi, B. (2009). Earnings quality: Some evidence on the role of auditor tenure and auditors' industry expertise. *Journal of Accounting & Economics*, 47 (3): 265–87.
- Hoitash, R, Markelevicg, A & Barragato, A. (2007). Auditor fees and audit quality. *Managerial Auditing Journal*, 22, (8), 761-783.

- Hay, D., Knechel, W., & Wong, N. (2006). Audit fees: A meta-analysis of the effect of supply and demand attributes. *Contemporary Accounting Research*, 23(1): 141-191.
- Jackson, B., Moldrich, M., & Roebuck, P. (2008). Mandatory audit firm rotation and audit quality, *Managerial Auditing Journal*, 23 (5): 420-437.
- Krishnan, G., & Visvanathan, G. (2009). Do auditors price audit committee's expertise? The case of accounting versus no accounting financial experts. *Journal of accounting, Auditing and Finance*, 24, (1):115-144.
- Kinney, R., & Libby, R. (2002). Discussion of the relation between auditors' fees for no audit services and earnings management. *The Accounting Review*, 77 (Supplement):107-14.
- Knechel, R. (2001). *Auditing, assurance & risk, south-western*. 2nd edition.
- Klein, B., & Leffler, K. (1981). The role of market forces in assuring contractual performance. *Journal of Political Economy*, 98: 615-641.
- Linberg, L. (2001). Discussion of the demand for auditor reputation across international markets for audit services. *The International Journal of Accounting*, 36(4):429-432.
- Larcker, F., & Richardson, S. (2004). Fees paid to audit firms, accrual choices, and corporate governance. *Journal of Accounting Research*, 42(3): 625-658.
- Larcker, F., & Richardson, A. (2004). Fees paid to audit firms, accrual choices, and corporate governance. *Journal of Accounting Research*, 42(3):625-58.
- McNichols, M. (2002). Discussion of the quality of accruals and earnings: the role of accrual estimation errors. *The Accounting Review*, 77(Supplement): 9- 61.
- Myers, J., Myers, L., & Omer, T. (2003). exploring the term of the auditor-client relationship and the quality of earnings: A case for mandatory auditor rotation? *The Accounting Review*, 78(3): 779-799.
- Mansi, S. A., W. F. Maxwell, and D. P. Miller, 2004. Does Auditor Quality and Tenure Matter to Investors? Evidence from the Bond Market, *Journal of Accounting Research* 42, 755-793.
- Parasuraman, A., Zeithaml, Valarie A., & Berry, L. L. (1988). Seroquel: A multiple-item scale for measuring consumer perceptions of service quality. *Journal of Retailing*.64. (1). pp. 12-40
- Simunic, .A. (1980). The pricing of audit services: theory and evidence. *Journal of Accounting Research*. 18(1):161-190.
- Solomon, I., Shields, M., & Whittington, R. (1999). What do industry-specialist auditors know? *Journal of Accounting Research*, 37(1): 191–208.
- Stanley, J., & Dezoort, T. (2007). Audit firm tenure and financial restatements: An analysis of industry specialization and fee effects. *Journal of Accounting and Public Policy*, 26 (2): 131–59.
- Simunic, A. (1984). Auditing, consulting, and auditor independence. *Journal of Accounting Research*, 22(2):679-702.
- Srinidhi, N., & Gul, F. (2007). The differential effects of auditors' non-audit and audit fees on accrual quality. *Contemporary Accounting Research*, 24(2): 595-629.

Vanstraelen, A. (2000). Impact of renewable long-term audit mandates on audit quality. *The European Accounting Review*, 9(3):419-442

Yuniarti, R. (2011). Audit firm size, audit fee and audit quality. *Journal of Global Management*, 2(1):84-97

### **Acknowledgement**

Firstly, I would like to express my sincere gratitude to my supervisor Prof. Wang xiong yuan, for his patience, motivation, and immense knowledge. His guidance helped me in all the time of research and writing of this article. My sincere thanks also goes to **Mr. Albitar Khaldoon** and **Mrs. Jin Ping** for the stimulating discussions, for the sleepless nights we were working together to write this article. Without their precious support it would not be possible to conduct this research. I would like also like to thank **Zhongnan University of Economics and Law**, the staff at the Accounting School for their efforts and assistance.