



# Under the Regulation of Equity Pledge, Research on the Influence of Audit Firm's Tenure on Audit Quality

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**Abstract.** Taking the A-share listed companies in Shanghai and Shenzhen from 2010 to 2020 as samples, this paper studies the relationship between term of office of accounting firm, equity pledge and audit quality. It is found that although the relationship between tenure and audit quality is non-linear, it is not an inverted “U” relationship. When the firm’s term is less than or equal to 7 years, the equity pledge can enhance the effect of the extension of the firm’s term on the audit quality. This adjustment only promotes the improvement of audit quality level. Through a heterogeneous analysis of financial situation, it is found that the regulatory role of equity pledge only exists in companies with better financial situation.

**Keyword:** audit firm term · equity pledge · audit quality · regulating effect

## 1 Introduction

Many cases of financial fraud and audit failure have made the reputation of audit work in the public decline. Therefore, China issued the rotation regulation in 2003, which limited the term of office of audit firms. However, at present, the audit rotation period at the firm level is only stipulated for central enterprises in China. There is no specific regulation on the rotation of firms in other industries, which makes audit firm’s tenure as long as ten years. Make the audit quality uneven.

There are three conclusions about the relationship between tenure and audit quality: Liu Q L found that there is a positive correlation between them [1]; Cheng X K found that there was a negative correlation between them in small-scale firms [2]. Zhang W F think that the audit independence is easy to be destroyed when the firm has a long term, which makes the quality of audit services decline [3]; Wang Yu found that the relationship between the audit firm’s tenure and audit quality is inverted “U” when the

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scale of accounting firms is small, [4]. At present, there is no unified conclusion on this issue.

In addition, shareholders pledge their shares for different motives, which makes the pledge of shares a common economic behavior in the capital market. It is also necessary to combine the pledge of shares with company research. However, there are few documents that link the equity pledge with the audit firm's tenure and audit quality. Therefore, this paper studies whether the equity pledge has some influence on the relationship between them.

## 2 Theoretical Analysis and Research Hypothesis

From the audit supply side, professional competence and audit independence are two important aspects that affect audit quality [5, 6].

Audit professional competence determines whether auditors can identify audit risks in time. At the initial stage of the audit, it is difficult for certified public accountants to detect the problems of the audited units in a timely and comprehensive manner, resulting in relatively low audit quality at the initial stage of the audit. After accumulating knowledge and experience, auditors can be better qualified for audit work and improve audit quality.

When the accounting firm has a long term, the firm will turn a blind eye to or even help cover up the fraud of the audited entity, and the firm has changed from a "supervisor" to a "community of interests". It greatly reduces the audit quality and the reliability of financial reports and other information [7].

In addition, the extension of the audit term at any time will lead the auditor to be satisfied with the status quo, and it is difficult to learn new audit methods, thus making the audit procedure not well applicable to the audit work of that year, resulting in the reduction of audit quality [8].

Therefore, in a short term, the learning effect is greater than the collusion effect, so the audit quality is continuously improved with the extension of the term; When the audit firm tenure is long, the collusion effect is greater than the learning effect, so, the quality of audit services provided by audit firms is gradually decreasing. Establish a hypothesis from this:

H1: There is a nonlinear relationship between audit firm's tenure and audit quality.

Scholars have fully studied the equity pledge. Zhang R J believes that companies with equity pledge will be charged higher audit fees by audit institutions when they obtain audit services [9]. The higher the audit cost, the more investment on behalf of auditors, which is conducive to the improvement of audit quality. Zhai B S and Xu H R believe that equity pledge makes certified public accountants pay more attention to risk response to improve audit quality [10]. In addition, companies with equity pledge are more likely to beautify the data of financial statements and manage earnings, which affects the audit quality.

The economic consequences of equity pledge will affect the decision-making and risk coping style of certified public accountants, and then affect the audit quality. Specifically, in the short term of the firm, due to the increasing competence of auditors and the increase

of audit investment, the equity pledge can enhance the promotion of audit quality by the term of the firm; When the audit firm's tenure is long, because the audit independence is affected, it is easier for companies with equity pledge to conduct earnings management, thus reducing the audit quality, and making equity pledge enhance the inhibitory effect of office term on audit quality. The following assumptions are made:

H2a: When the audit firm's tenure is short, the equity pledge can enhance the positive correlation between the tenure of the firm and the audit quality.

H2b: When the audit firm tenure is long, the equity pledge can inhibit the negative correlation between the tenure of the firm and the audit quality.

### 3 Research Design

#### 3.1 Sample Source and Data Processing

Data processing is as follows: ① Eliminate St and \*St companies. ② Excluding financial and insurance companies. ③ Eliminate samples with missing key financial data. ④ Eliminate IPO companies. ⑤ Because the central enterprises have implemented the mandatory rotation system of firms, the samples of central enterprises are excluded. In addition, the data is truncated.

Information such as merger, reorganization and name change of the firm is obtained from Juchao Information Network and company announcement, and the years of continuous service of the firm are obtained by manual sorting, while other data are obtained from CSMAR and processed by state16.0.

#### 3.2 Selection and Definition of Variables

The modified jones model calculates the absolute value (*absda*) of the discretionary accrued profit to measure the audit quality. The tenure of an accounting firm is measured by the number of years of continuous service for a listed company (*tenure*). The firms that have been merged and renamed are regarded as the same firm, and the subsequent service years are accumulated into the continuous service years. Pledge is regarded as a moderating variable that affects the audit quality relationship of the firm's tenure, this paper uses the proportion of pledge of equity for regression analysis. Whether there is equity pledge (*pld\_dum*) at the end of the year is used as a substitute index of adjusting variables for robustness test. The control variables are the size of accounting firm (*ib4*), whether the company is losing money (*loss*), the size of the company (*size*), audit opinions and property rights (*state*), financial leverage (*lev*), and the fixed year effect is added.

#### 3.3 Construction of Research Model

According to the existing literature, the following model is established to verify the proposed hypothesis:

$$\begin{aligned} \text{absda} = & \beta_0 + \beta_1 \text{tenure} + \beta_2 \text{tenure}^2 + \beta_3 \text{ib4} \\ & + \beta_4 \text{loss} + \beta_5 \text{size} + \beta_6 \text{lev} + \beta_7 \text{opinion} \end{aligned}$$

$$+ \beta_8 \text{ state} + \sum \text{year} + \varepsilon \quad (1)$$

$$\begin{aligned} \text{absda} = & \beta_0 + \beta_1 \text{ tenure} + \beta_2 \text{ tenure}^2 + \beta_3 \text{ pledge} \\ & + \beta_4 \text{ tenure} * \text{pledge} + \beta_5 \text{ tenure}^2 * \text{pledge} + \beta_6 \text{ ib4} \\ & + \beta_7 \text{ loss} + \beta_8 \text{ size} + \beta_9 \text{ lev} + \beta_{10} \text{ opinion} \\ & + \beta_{11} \text{ state} + \sum \text{year} + \varepsilon \end{aligned} \quad (2)$$

## 4 Regression Analysis

### 4.1 The Relationship Between Audit Firm's Tenure and Audit Quality

The regression results of the model (1) are shown in the second column of Table 1, and 'tenure' and 'tenure2' are significant. That is, there is a nonlinear relationship between audit firm's tenure and audit quality. H1 is verified;

The coefficients  $\beta_1$  and  $\beta_2$  in this paper are -0.002166 and 0.0001494, respectively, so  $-\beta_1/2\beta_2 \approx 7.25$ . In order to verify whether the relationship between them is inverted 'U'. Regression was performed on two sub-samples 'tenure  $\leq 7$ ' and 'tenure  $> 7$ ', and the following model is constructed:

$$\begin{aligned} \text{absda} = & \beta_0 + \beta_1 \text{ tenure} + \beta_2 \text{ ib4} + \beta_3 \text{ loss} \\ & + \beta_4 \text{ size} + \beta_5 \text{ lev} + \beta_6 \text{ opinion} \\ & + \beta_7 \text{ state} + \sum \text{year} + \varepsilon \end{aligned} \quad (3)$$

The regression result of the sample of "tenure  $\leq 7$ " is shown in column (2) of Table 2. The coefficient of tenure is significant at 1% level, which shows that when tenure  $\leq 7$ , the longer the firm's tenure, the higher the quality of audit services. This is because at this stage, the auditor's professional competence has been continuously improved and dominated.

The regression results of 'tenure  $> 7$ ' are shown in column (3) in Table 1. The regression result is not significant. In this paper, the sample companies with 'tenure  $> 7$ ' are divided into large-scale firms and non-large-scale firms for regression according to whether they employ the international big four to provide audit services, but the regression results are not significant. This is because: The extension of the audit firm's term of office has gradually increased the pressure of external supervision on the audited units, which makes the independence less affected, and the collusion effect is not significantly greater than the learning effect, so the audit quality has not decreased significantly. Therefore, the right half of the inverted "U" shape is not shown.

### 4.2 Adjustment Function of Equity Pledge

The regression result of model (2) is shown in column (1) of Table 2, in which the coefficient of tenure\*pledge is -0.016 and that of tenure2\*pledge is 0.001, which are significant at the levels of 1% and 5% respectively. It shows that the equity pledge can

**Table 1.** Audit quality and the return of the office term.

Variable	(1)	(2)	(3)
tenure	-0.002*** (0.001)	-0.001*** (0.000)	-0.000 (0.002)
tenure2	0.000** (0.000)		
Control	Yes	Yes	Yes
Year	Yes	Yes	Yes
N	17111	15417	1694
R <sub>2</sub>	0.081	0.074	0.184

Note: \*\*\* p < 0.01, \*\* p < 0.05, \* p < 0.1

have a significant impact on the relationship between audit firm’s tenure and the audit quality, that is, it has a regulatory effect.

From the regression results of model (2), it is known that  $\beta_1$  and  $\beta_2$  are -0.002238 and 0.0001544, respectively, and  $-\beta_1/2\beta_2 \approx 7.20$ . Therefore, the following model is established to regress the samples with audit firm’s tenure  $\leq 7$  to further study the regulatory effect of equity pledge.

$$\begin{aligned}
 \text{absda} = & \beta_0 + \beta_1 \text{tenure} + \beta_2 \text{pledge} + \beta_3 \text{tenure} * \text{pledge} \\
 & + \beta_4 \text{ib4} + \beta_5 \text{loss} + \beta_6 \text{size} + \beta_7 \text{lev} + \beta_8 \text{opinion} \\
 & + \beta_9 \text{state} + \sum \text{year} + \varepsilon
 \end{aligned} \tag{4}$$

The regression results are shown in column (2) of Table 2, in which the coefficient of tenure\*pledge is significant at the level of 1%, and the coefficient of tenure is -0.001, which indicates that the equity pledge has enhanced the positive correlation between audit firm’s tenure and audit quality during the short audit firm’s tenure, and H2a has been verified. The reason for this adjustment may be the same as the previous analysis: companies with equity pledge have higher audit risk and face more supervision from regulators and investors. Auditors will increase audit investment and formulate audit procedures suitable for the audited units with equity pledge, which improves the audit quality. In addition, the regression results of samples with firm tenure > 7 are not significant when they are substituted into the model (4), and then the regression results of two sub-samples are still not significant after grouping regression by firm size. Therefore, H2b is not valid.

Therefore, the regulatory role of equity pledge is as follows: when the firm’s tenure is short (tenure  $\leq 7$ ), with the extension of the tenure, the regulatory role of equity pledge only improves the audit quality level; When tenure > 7 years, there is no evidence of the regulatory effect of equity pledge.

**Table 2.** Regression results of regulatory function test

variable	(1)	(2)	(3) good financial situation	(4) bad financial situation
tenure	-0.002*** (0.001)	-0.001*** (0.000)	-0.001** (0.001)	-0.006** (0.003)
tenure2	0.000** (0.000)		0.000 (0.000)	0.001** (0.000)
pledge	0.045*** (0.012)	0.010** (0.004)	0.014*** (0.004)	-0.004 (0.017)
Tenure *pledge	-0.016*** (0.006)	-0.007*** (0.002)	-0.016*** (0.006)	-0.022 (0.024)
tenure2 *pledge	0.001** (0.001)		0.001** (0.001)	0.002 (0.002)
control	Yes	Yes	Yes	Yes
year	Yes	Yes	Yes	Yes
N	17111	15417	15405	1706
R <sub>2</sub>	0.082	0.075	0.025	0.141

Note: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

## 5 Heterogeneity Analysis of Financial Situation

In order to further study the regulatory role of equity pledge. The results of grouping regression for different financial situations are shown in columns (3) and (4) of Table 2, the coefficient of tenure\*pledge with better financial situation is -0.016, which is significant at 1% level. The coefficient of tenure2\*pledge is 0.001, which is significant at the level of 5%. However, when the financial situation is poor, the coefficient is not significant. The regression result shows that the equity pledge can adjust the relationship between the tenure of the firm and the audit quality in the company with good financial situation, but it cannot adjust the relationship between the tenure of the firm and the audit quality in the company with poor financial situation.

## 6 Robustness Test

(1) The independent variables were replaced by audit opinions, and the results were consistent with the above. (2) Whether or not to pledge the stock right is used as a substitute indicator of the regulatory variable to test the robustness of the regulatory effect. The regression results are consistent with the above research. It shows that the results are robust.

## 7 Conclusions

It is found that there is a nonlinear relationship between audit firm's tenure and the audit quality. It is not the inverted "U" shape studied by predecessors. Specifically, when tenure  $\leq 7$ , the longer audit firm's tenure, the higher the quality of audit services. When Tenure  $> 7$ , no correlation was found between them.

The regulatory function of equity pledge is that when the tenure of the firm is short (tenure  $\leq 7$ ), with the extension of the tenure of the firm, the regulatory function of equity pledge only improves the audit quality level, but no evidence has been found to affect the inflection point of their nonlinear relationship. Through a heterogeneous analysis of financial situation, it is found that the regulatory role of equity pledge only exists in companies with better financial situation.

## References

1. Liu Q L, Tang J X. Learning Effect, Personal Relationship, Audit Term and Audit Quality. *Audit Research*, 2009(04):52–64. [https://kns.cnki.net/kcms2/article/abstract?v=3uoqlhG8C44YLTIOAiTRKgchrJ08w1e75TZJapvoLK2vcvZuYVpTrhiCPmqz-p2KrU8TzcBNLZp77X2KOjZOYXnLxH2PSb\\_P&uniplatform=NZKPT](https://kns.cnki.net/kcms2/article/abstract?v=3uoqlhG8C44YLTIOAiTRKgchrJ08w1e75TZJapvoLK2vcvZuYVpTrhiCPmqz-p2KrU8TzcBNLZp77X2KOjZOYXnLxH2PSb_P&uniplatform=NZKPT)
2. Cheng X K, Li H Y, Zheng L D. The influence of firm size and audit term on the disclosure of internal control defects of listed companies-empirical evidence from integrated audit companies. *Systems Engineering*, 2016, 34(08):1–12. [https://kns.cnki.net/kcms2/article/abstract?v=3uoqlhG8C44YLTIOAiTRKibYIV5Vjs7iAEhECQAQ9aTiC5BjCgn0RiPxwHNI MCZ5TQ77hs47Xx\\_d3LOoTecyNWI984AHqpZY&uniplatform=NZKPT](https://kns.cnki.net/kcms2/article/abstract?v=3uoqlhG8C44YLTIOAiTRKibYIV5Vjs7iAEhECQAQ9aTiC5BjCgn0RiPxwHNI MCZ5TQ77hs47Xx_d3LOoTecyNWI984AHqpZY&uniplatform=NZKPT)
3. Zhang W F. Firm Size, Audit Term and Audit Quality. *Accounting Monthly*, 2018(02): 135–142. DOI: <https://doi.org/10.19641/j.cnki.42-1290/f.2018.02.020>
4. Wang Y, Liu X N, Yang Y Z. Audit Term, Firm Size and Audit Quality—Empirical Evidence from China Stock Market. *Accounting Monthly*, 2018(01): 156–163. <https://doi.org/10.19641/j.cnki.42-1290/f.2018.01.026>.
5. Wang S H, Shangguan Z M. Independence, Professional Competence and Information Quality of Audit Results—A Cross-border Empirical Analysis from the Perspective of Public Goods. *Journal of Central University of Finance and Economics*, 2021(03): 58–73. <https://doi.org/10.19681/j.cnki.jcufe.2021.03.006>.
6. Zhao Y C, Pan H T. Study on influencing factors of audit quality and countermeasures-taking Kangmei Pharmaceutical as an example. *Modern Business Trade Industry*, 2022, 43 (03): 110–112. <https://doi.org/10.19311/j.cnki.1672-3198.2022.00>.
7. Chen L L. Compulsory rotation of accounting firms, client importance and audit independence. *Accounting Newsletter*, 2018 (27): 34–39. <https://doi.org/10.16144/j.cnki. ISSN 1002-8072.2018.27.006>.
8. Chi Y L, Miao C Y. Firm size, audit term and accounting conservatism. *Accounting Newsletter*, 2016 (21): 9–11. <https://doi.org/10.16144/j.cnki. ISSN 1002-8072.2016.21.002>.
9. Zhang J R, Yu S J, Cheng Z J. Will the pledge of major shareholders affect the auditor's decision? -Evidence based on audit fees and audit opinions [J]. *Audit Research*, 2017 (03): 65-73. DOI: <https://doi.org/10.3969/j. ISSN. 1002-4239.2017.03.10>
10. Zhai S B, Xu H R, Liu Y S, Tang W. Equity pledge of controlling shareholders and auditor's risk response. *Management World*, 2017 (10): 51–65. <https://doi.org/10.19744/j.cnki.11-1235/f. 2017.10>.

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