Research on the Relationship between Directors' Executive Liability Insurance and Audit Quality

-- Based on the Mediating Effect of Accounting Information Disclosure Quality

Jinping Liu[a], Yujun Wang*

The College of Economics Bohai University, Jinzhou, Liaoning, China

[a]ljp236@126.com, *1467676189@qq.com

Abstract. In recent years, due to relevant policy changes and litigation cases of listed companies, director and executive liability insurance (hereinafter referred to as "D&O insurance") has gained a larger market. As a third-party supervision mechanism, the quality of external audit will affect the decision-making of market investors, so it is necessary to improve the audit quality of the firm. Through empirical research, this paper finds that D&O insurance can significantly improve audit quality, in which the quality of accounting information disclosure plays an intermediary role, and the improvement effect is more significant in non-Big Four audit enterprises. The research results enrich the relevant literature on D&O insurance and audit quality, and are conducive to further promoting D&O insurance.

Keywords: D&O, audit quality, accounting information disclosure quality.

1 Introduction

China introduced D&O insurance in the early 21st century, but the insurance rate of listed companies in China is only 10%. In 2020, the revised Securities Law of the People's Republic of China (hereinafter referred to as the "New Securities Law") comes into effect, which increases the risk and liability of management and provides a larger market for the development of D&O insurance. Audit quality is one of the main standards to measure the level of audit, and high audit quality is very important for the information users of audited companies.

Studies have shown that D&O insurance significantly improves the quality of information disclosure [7]. The improvement of information disclosure quality will have a direct impact on audit quality, so will D&O insurance have an impact on audit quality? What is the intermediary mechanism between them? There are still some deficiencies in relevant researches, which need further exploration and research.

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2 Analysis Hypothesis

2.1 Opportunism Effect

According to the opportunist view, D&O insurance reduces the deterrent effect of law, transfers the responsibility of directors and supervisors, reduces the litigation risk that management may face [3], and increases agency conflicts between directors and shareholders. Under the protection of D&O insurance, the high level of directors and supervisors will increase self-interested behaviors [2], leading to the increased possibility of earnings manipulation, which will further lead to the decline in the quality of accounting information disclosure, and then lead to the rise in the risk and difficulty of audit work, and the decline in audit quality.

2.2 Supervise Incentive Effect

Based on the supervision incentive effect, insurance institutions will inspect and supervise the insured company to reduce the possible liability for compensation after underwriting. D&O insurance can attract outstanding talents for the company, stimulate their enthusiasm for work, and improve the company's governance level[6].Therefore, D&O insurance reduces the earnings management behavior of management [8], improves the quality of accounting information disclosure[10], and thus improves the audit quality.

From this, hypotheses are presented:

H1a: Taking out D&O insurance will reduce audit quality.

H1b: Taking out D&O insurance will improve audit quality.

H2: The quality of accounting information disclosure plays an intermediary role in the relationship between D&O insurance and audit quality.

3 Research Design

3.1 Data Source and Sample Selection

This paper takes A-share listed companies from 2009 to 2022 as samples, and excludes listed companies in the financial industry, ST, *ST, and samples with missing data. The total number of final samples was 21,769, all data from the CSMAR database.

3.2 Model Design and Variable Definition

In this paper, the fixed effect model is adopted, and the following model (1) is proposed [9].Stata16.0 is used to process the data.

$$\mathrm{DA} = \alpha_0 + \alpha_1 D\&O + \alpha_2 Controls_{i,t} + \Sigma Year + \Sigma \mathrm{Ind} + \varepsilon_{i,t} \tag{1}$$

In formula (1), DA represents audit quality and D&O represents whether D&O insurance is applied. Controls indicate the control variables, $\sum$Year indicates the fixed effect of the year, $\sum$Ind indicates the fixed effect of the industry, subscript i indicates different enterprises, subscript t indicates different times. Audit quality is measured using discretionary accruals[5]. See Table 1 for the meanings of specific variables[4].

Table 1. Main variable definition table

Variable name	Variable code	Variable meaning
Audit quality	DA	Non-manipulative accruals
Directors and officers liability insurance	D&O	Buy D&O insurance get 1, and those who do not buy D&O insurance get 0
Company age	age	Add 1 to the number of years the company has been established
Company size	size	Take the natural logarithm of the total assets at the end of the period
Return on total assets	roa	Ratio of net profit to total assets at end of period
Asset-liability ratio	lev	Ratio of ending total liabilities to total assets
Type of audit opinion	audittyp	Type of opinion issued by the accounting firm
Management shareholding ratio	manhold	The number of management shares as a percentage of total shares
Industry dummy variable	year	Industry classification of CSRC in 2012
Annual dummy variable	industry	Annual dummy variable

4 Empirical Analysis

4.1 Descriptive Statistics

The mean value of audit quality is 0.006 and the standard deviation is 0.080, indicating that the audit quality of sample companies is high and the individual differences are small. The insurance coverage rate is 9.32%, which is still at a low level compared with Western countries. The average return on total assets is 0.038, indicating that the total return on assets of the sample companies is generally low. The maximum value of management shareholding ratio is close to 0.9, and the minimum value is only 0.02, which indicates that the management shareholding ratio of sample companies varies greatly among individuals.

4.2 Analysis of Regression Results

Column (1) in Table 2 shows the regression results of D&O insurance and audit quality, with a regression coefficient of -0.008 and a significant positive correlation at 1% level, indicating that D&O insurance can significantly improve audit quality, verify hypothesis H1b, and support the supervision incentive effect of D&O insurance. (t-statistics ***p<0.01,**p<0.05,*p<0.1).

Table 2. Regression results of D&O insurance and audit quality

	(1)All Sample	(2)Big4	(3)Not Big4
	DA	DA	DA
D&O	-0.008***	-0.002	-0.007***
age	-0.006 ***	-0.022***	-0.006***
roa	0.261***	0.291***	0.260***
lev	0.007**	-0.031**	0.007**
audittyp	-0.024***	0.047***	0.023***
size	0.002***	0.001	0.004***
manhold	0.000***	-0.00	0.000***
Year Ind	yes	yes	yes
Adj-r^2	0.169	0.137	0.172
F	115.13	6.05	111.57

4.3 Analysis of the Mediating Effect of Information Disclosure Quality

In order to verify the quality of information disclosure, this paper adopts the three-step method to test the mediation effect [1]. Based on model (1), models (2) and (3) are further constructed:

$$\text{Evaluation} = \beta_0 + \beta_1 D\&O + \beta_2 Controls_{i,t} + \Sigma Year + \Sigma Ind + \varepsilon_{i,t} \quad (2)$$

$$\text{DA} = \gamma_0 + \gamma_1 D\&O + \gamma_2 Evaluation + \gamma_3 Controls_{i,t} + \Sigma Year + \Sigma Ind + \varepsilon_{i,t} \quad (3)$$

Table 3 reports the regression results of mediating effect on information disclosure quality. As can be seen from column (1), the regression result of D&O is -0.008, and is significant at 1% level, indicating that the purchase of D&O insurance by listed companies improves audit quality. As can be seen from column (2), the regression coefficient of D&O is -0.065, which is significant at 1% level, indicating that the purchase of D&O insurance by listed companies improves the quality of accounting information disclosure of enterprises. As can be seen from column (3), after adding the intermediary variable of accounting information disclosure quality, the regression coefficient of D&O is -0.08, and the regression coefficient of Evaluation is 0.539, both of which are significant at the level of 1%, indicating that the quality of accounting information disclosure plays an intermediary role in the improvement of audit quality by D&O insurance.

Table 3. D&O insurance, information disclosure quality and audit quality

	(1)	(2)	(3)
	DA	Evaluation	DA
D&O	-0.008***	-0.065***	-0.08***
Evaluation			0.539***
Controls	yes	yes	yes
Year	yes	yes	yes
Industry	yes	yes	yes
Adj-r^2	0.169	0.200	0.170
F	115.13	142.07	113.15

4.4 Heterogeneity Analysis

This paper makes regression analysis on two different types of enterprises according to whether they are divided into four groups and non-four groups. As shown in column (2) and (3) of Table 2, the regression coefficient of D&O insurance on audit quality in non-Big Four audit groups is -0.007, which is significant at the level of 1%. However, D&O insurance has no significant impact on the improvement of audit quality in the four major audits. This shows that the introduction of D&O insurance in non-Big Four audit is conducive to improving audit quality.

4.5 Robustness Test

In this paper, the robustness analysis was conducted by replacing the measurement method of explained variables, lagging one period and removing samples from 2020-2022 during the COVID-19 epidemic period, and the results showed that the conclusions of this paper were still valid. In addition, the maximum value of VIF is 1.78 and the mean value is 3.85, indicating that there is no serious multicollinearity problem between the variables.

5 Research Conclusions

This paper takes China's A-share listed companies from 2009 to 2022 as samples to empirically study the impact of listed companies' purchase of D&O insurance on audit quality. It is found that D&O insurance purchased by listed companies significantly improves audit quality, which supports the supervision incentive theory of D&O insurance. Further research finds that the quality of accounting information disclosure plays an intermediary effect in the above relationship, and the correlation between D&O insurance purchase and audit quality is more significant in non-Big Four audits. The research conclusions enrich the research on the economic consequences of D&O insurance and the factors of audit quality, which is conducive to enterprises and external supervision institutions to fully understand the role of D&O insurance, and provide empirical evidence for further promotion of D&O insurance.

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