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Management Overconfidence, Non-Executive Directors and Audit Fees

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ABSTRACT. *Based on the behavioral finance theory and principal-agent theory, this paper adopts a combination of normative research and empirical research,this paper empirically tests the impact of managers' overconfidence on audit fees, and analyzes the mechanism of the relationship between non-executive directors and audit fees.This paper selects the data of A-share non-financial listed companies in Shanghai and Shenzhen from 2013 to 2018 as the research object,the empirical results show that the management with overconfidence reduces the quality of accounting information and increases the risk of the company,In order to avoid the possible audit risk, auditors increase the audit workload and increase the risk premium, thus increasing the audit cost.Further research shows that the non-executive directors can supervise the management to a certain extent. With the increase of the proportion of non-executive directors, the positive correlation between managers' overconfidence and audit costs gradually weakens.*

KEYWORDS: *audit fees, overconfidence of managers, non-executive directors*

1. Introduction

Behavioral finance applies psychology to the study of corporate finance, which explains many reasons that traditional economics can't explain, and managers' overconfidence just represents the decision-making psychology of management, so it will inevitably affect the decision-making process of management.The influencing factors of audit cost have always been an important topic in the field of corporate finance and audit, but few scholars study the influence of management overconfidence on audit cost.The overconfidence of managers of listed companies will bring risks to the normal operation of the company to some extent.This overconfidence makes them overestimate the company's earnings, and underestimate the potential risk of the project [1]. In serious cases, it may cause the listed companies to make mistakes in decision-making and suffer huge losses.In terms of audit, the irrationality of the managers of listed companies will aggravate the information asymmetry of listed companies, which will ultimately affect the quality of accounting information and improve the financial risk of companies. Auditors will then make corresponding strategic response, expand the scope of audit to obtain more audit evidence to ensure the accuracy of their audit opinion, so auditors will strive for more audit premium to make up for audit risk.

As the core of corporate governance, the board of directors is the bridge and link between shareholders and management.As an internal supervision mechanism, the board of directors provides insurance for the company's stakeholders, while as an external supervision mechanism, the audit of accounting firms provides reinsurance for the listed company's stakeholders.The supervision of the board of directors on the top management directly affects the behavior decision-making of the top management [2]. However, most of the studies focus on the independent directors.Theoretically speaking, the prerequisite for independent directors to fully play the role of supervision is that they should be completely independent of listed companies, on the contrary, some studies have found that independent directors rarely oppose the management publicly.As an important part of the board of directors, although the non-executive director does not serve in the company,but he usually works in the company where the shareholders are, so he has a deeper understanding of the operation and market of the enterprise, which can reduce the degree of information asymmetry with the management of listed companies, and he plays a great role in corporate governance[3].Based on this, this paper studies the relationship between overconfidence of managers and audit fees, and takes non-executive directors as moderating variables to explore the relationship between them.

2. Theoretical analysis and research hypothesis

2.1 Manager Overconfidence and Audit cost

Along with the movement of the target, the sink node timely notifies the sensor nodes in the relevant detection area to join in the process of target tracking. Figure 1 is the flow chart of the moving target tracking process.From the self-interest attribution theory, we know that enterprise leaders usually show a certain self-care attribution thinking, often feel that they guide the enterprise to success, so the managers' personal psychology will become more expansive, and it is likely that they will not perceive the financial risks of the enterprise, which will bring audit risks to the auditors.The research results of Antoinette indicate that the overconfidence behavior of the company's management has a positive correlation with earnings management. If the company has problems such as unreliable accounting information quality and financial fraud, the auditors will spend more resources and time to expand the scope of audit.Minggui Yu et al.believed that overconfident managers usually adopt more radical accounting policies, they tend to overestimate the profitability of investment projects and underestimate the risk, at this time, the company's operational risk increases [4]. Ahmed and Duellman point out that managers with overconfidence are more likely to adopt aggressive accounting methods [5]. Research by schrand and zechman shows that there is a positive correlation between managers' overconfidence and the possibility of financial reporting fraud [6]. Su Chen's research shows that when there are financial difficulties within the enterprise, the company's executives are more likely to adopt the unstable accounting methods, and the overconfidence of managers will negatively affect the level of accounting conservatism [7]. According to the previous analysis, many studies have confirmed that managers' overconfidence directly or indirectly reduces the quality of accounting information and increases financial risks.When the audit risk is high, the audit risk will not be completely eliminated because of the increase of audit workload, only higher risk premium is required to compensate the accounting firm.Based on the above analysis, we propose hypothesis 1:

H1: under the control of other factors, managers' overconfidence is positively related to audit cost.

2.2 Management overconfidence, non-executive directors and audit fees

As an important part of board allocation, external directors have strong motivation to supervise the improper behaviors of management based on their own reputation.Previous studies have shown that independent directors may not be independent. Since non-executive directors hold positions in shareholder units, they are very clear about the interests of shareholders they represent. Therefore, compared with independent directors, non-executive directors can give full play to the role of supervisors [8] (Jigao Zhu). Zhengfei Lu, research shows that the shareholders of listed companies appoint non-executive directors to the board of directors is an important means to supervise the management, and points out that non-executive directors can improve the efficiency of corporate governance more than independent directors[9].Yingzi Li ,found that the more non-executive directors in the board of directors of listed companies, the more significant the role of the board of directors in the supervision of management [10].

According to the principal-agent theory, In enterprises with a high proportion of non-executive directors, non-executive directors can effectively play the role of supervision and management, so as to reduce the risk of financial misstatement, improve the quality of accounting information, reduce the audit risk faced by auditors, and reduce audit costs.That is to say, the proportion of non-executive directors can play a moderating role in the relationship between managers' overconfidence and audit fees.Accordingly, the following assumptions are proposed:

H2: under the control of other factors, non-executive directors can inhibit the positive relationship between managers' overconfidence and audit fees.

3. Data sources and research design

3.1 Sample selection and source

In this paper, the observation values of A-share non-financial listed companies from 2013 to 2018 are selected as the initial samples. The data are from CSMAR and Wind databases. All data processing and statistical analysis are conducted in Excel 2007 and Stata 15.0. On this basis, the following data processing is carried out: (1) Excluding the listed companies of financial insurance; (2) Excluding ST and * ST sample enterprises; (3) Remove the missing observation values of relevant information data; (4) In order to eliminate the influence of outliers, all continuous variables were tailed in the upper and lower 1% quantiles.

3.2 Model design and variable definition

(1) Explained variable

The explanatory variable of this paper is the audit fee , which is the natural logarithm of the annual audit fee paid by the listed company to the audit firm.

(2) Explanatory variable

The key explanatory variable of this paper is Manager Overconfidence (Oc).Considering the availability of data, this paper uses the relative compensation of executives to measure managers' overconfidence.The adjusting variable of this paper is the proportion of non-executive directors (Ne).The proportion of the company's non-executive directors to the total number of directors is Ne. The larger the proportion of non-executive directors, the stronger the ability of supervision, the greater the impact on the company's management.

(3) Control variable

This paper chooses Size and Lntr, Recizv, Lev, Inde, Dual, Board, Roa, Big and Audit as control variables, the specific variable definitions are shown in Table 1:

Table 1 Variable definition

Variable type	Variable name	Variable symbol	Variable specification
Explained variable	Audit fees	Lnfee	Natural logarithm of audit cost in annual report
Explanatory variable	Overconfidence of managers	Oc	Sum of top three executives / sum of all executives
	Proportion of non-executive directors	Ne	Number of non-executive directors / total number of directors
control variable	Enterprise scale	Size	Natural logarithm of total assets of the company at the end of the year
	Audit complexity	Recizv	Sum of accounts receivable and inventory at the end of the year / total assets
	Asset liability ratio	Lev	Total liabilities / total assets at the end of the year
	Proportion of independent directors	Inde	Number of independent directors / total number of directors
	Two duty unification	Dual	If the chairman and the general manager are the same person, the value is 1, otherwise 0
	Board size	Board	Number of board members
	Profitability	Roa	Net profit / total assets at the end of the year

	Brand reputation of the firm	Big	If it is the international top four, big = 1, otherwise 0
	audit opinion	Audit	Non standard audit opinion is 1, otherwise 0
	Industry variables	Ind	Industry dummy variable
	Annual variable	Year	Annual virtual variable

3.3 Model building

In this paper, model 1 and model 2 are established to verify the research hypothesis.Among them, Oc and Ne are the main explanatory variables, the cross multiplication term Oc * Ne is constructed to further verify hypothesis 2.The model is as follows:

$$Lnfee_{i,t}=\beta_0+\beta_1 Oc_{i,t}+\beta_2 Size_{i,t}+\beta_3 Lntr_{i,t}+\beta_4 Recizv_{i,t}+\beta_5 Lev_{i,t}+\beta_6 Inde_{i,t}+\beta_7 Dual_{i,t}+\beta_8 Board_{i,t}+\beta_9 Roa_{i,t}+\beta_{10} Big_{i,t}+\beta_{11} Audit_{i,t}+\sum Ind+\sum Year+\varepsilon_t$$

Model 1

$$Lnfee_{i,t}=\beta_0+\beta_1 Oc_{i,t}+\beta_2 Ne_{i,t}+\beta_3 Oc_{i,t}*Ne_{i,t}+\beta_4 Size_{i,t}+\beta_5 Lntr_{i,t}+\beta_6 Recizv_{i,t}+\beta_7 Lev_{i,t}+\beta_8 Inde_{i,t}+\beta_9 Dua_{i,t}l+\beta_{10} Board_{i,t}+\beta_{11} Roa_{i,t}+\beta_{12} Big_{i,t}+\beta_{13} Audit_{i,t}+\sum Ind+\sum Year+\varepsilon_t$$

Model 2

4. Empirical analysis

4.1descriptive statistics

Table 2 Descriptive statistics of variables

Variable name	sample size	average value	standard deviation	minimum value	p50	Maximum value
Lnfee	15177	13.79	0.710	11.51	13.70	19.40
Oc	15177	0.380	0.140	0	0.370	6.310
Ne	15177	0.180	0.120	0	0.140	0.860
Size	15177	22.15	1.330	15.98	21.99	28.52
Recinv	15177	0.270	0.170	0	0.250	0.940
Lev	15177	0.410	0.200	0.010	0.390	0.990
Inde	15177	0.380	0.060	0.140	0.360	0.800
Dual	15177	0.290	0.450	0	0	1
Board	15177	8.550	1.690	3	9	18
Roa	15177	0.050	0.120	0	0.040	10.40
Big	15177	0.050	0.230	0	0	1
Audit	15177	0.010	0.120	0	0	1

Table 2 reports the descriptive statistics of the relevant variables.The results of the whole sample show that the maximum value of audit fee (Lnfee) is 19.40, the minimum value is 11.51, and the standard deviation is 0.710, which indicates that there is a certain gap in the audit fee expenditure disclosed by different listed companies in their annual financial statements;The average value of managers' overconfidence (Oc) is 0.38, which indicates that the average concentration of executive compensation in the sample company is 38%. The top three executives with the highest compensation have strong control over the company. The higher the concentration of compensation, the more likely the managers are to show overconfidence; The minimum value of the asset liability ratio (Lev) is 0.010, and the maximum value is 0.990. Some companies are insolvent, the average value is 0.41 lower than 0.5, indicating that the capital structure of the sample company is more reasonable.

4.2 Regression analysis

(1) Regression analysis of overconfidence of managers and audit cost

The second column of Table 3 shows the multiple linear regression results of hypothesis 1.The adjusted R^2 is 0.575, which indicates that the whole regression equation fits the characteristics of sample data well,From the regression results of hypothesis 1, it can be seen that the regression coefficient of managers' overconfidence (Oc) to audit fees (Lnfee) is 0.095, t value is 3.71, which is significantly positive at the level of 1%.This shows that under the same other conditions, there is a significant positive correlation between managers' overconfidence and audit costs, which is consistent with the expectation of hypothesis 1.The coefficient of company size is 0.381, which is significantly positive at the statistical level of 1%, which indicates that the larger the company scale, the larger the audit workload, and the higher the audit cost, which is consistent with the previous research conclusions;The coefficient of the asset liability ratio (Lev) is 0.129, which is significantly positive at the level of 1%, which indicates that the weaker the debt paying ability of the audited unit is, the greater the audit complexity is, and then the increase of the audit cost is affected.

(2) Regression analysis of overconfidence of managers, non-executive directors and audit fees

Model 2 constructs the cross product of managers' overconfidence (Oc) and non-executive directors' proportion (Ne),further study whether non-executive directors can influence the relationship between managers' overconfidence and audit fees.According to the regression results in the third column of Table 3, the coefficient of control variable company size is 0.383, which is significantly positive at the level of 1%, indicating that the larger the size of the audited unit is, the higher the corresponding audit cost is;The coefficient of managers' overconfidence (Oc) is 0.136, t value is 5.08, which is significantly positive at the level of 1%, which shows that the increase of managers' overconfidence will increase the audit cost of enterprises;The multiplier coefficient of managers' overconfidence (Oc) and the proportion of non-executive directors (Oc * Ne) is -0.127, t value is -6.07, which is significantly negative at the 1% statistical level, indicating that non-executive directors can indeed play a role in supervising management,so as to reduce the risk of financial misstatement, improve the quality of accounting information, reduce the audit risk faced by auditors, and reduce audit costs.That is, the proportion of non-executive directors can play a moderating role in the relationship between managers' overconfidence and audit costs, which verifies hypothesis 2.

Table 3 Regression results of each model

Variable name	(1) Hypothesis 1	(2) Hypothesis 2
Oc	0.095***	0.136***
	(3.71)	(5.08)
Ne		-0.105***
		(-3.79)
Oc*Ne		-0.127***
		(-6.07)
Size	0.381***	0.383***
	(104.70)	(104.93)
Recinv	0.007	0.006
	(0.26)	(0.21)
Lev	0.129***	0.138***
	(5.65)	(6.04)
Inde	0.113	0.109
	(1.58)	(1.53)
Dual	0.014*	0.001
	(1.77)	(0.08)
Board	-0.001	-0.001
	(-0.43)	(-0.34)
Roa	0.057**	0.053*
	(2.08)	(1.93)
Big	0.633***	0.634***
	(39.75)	(39.83)
Audit	0.192***	0.188***
	(6.91)	(6.75)
_cons	5.130***	5.090***
	(58.61)	(57.51)
Year	control	control
Ind	control	control
N	15177	15177
R^2	0.575	0.562

** p<0.1, **p<0.05, ***p<0.001*

4.3 Regression analysis

In order to increase the reliability of empirical conclusions, the following robustness tests are carried out.Because the overconfidence of managers may have a lag effect on the quality of accounting information, which may affect the auditor's assessment of the company's audit risk and lead to the lag effect of audit fees, we use the lag period (Oc1) of explanatory variables to conduct regression analysis.The results are unchanged, as shown in Table 4, the conclusion of this paper is still reliable.

Table 4 Regression results of robustness test

Variable name	(1) Hypothesis 1	(2) Hypothesis 2
	Lnfee	Lnfee
Oc1	0.075***	0.136***
	(2.67)	(4.61)
Ne		-0.131***
		(-4.14)
Oc1* Ne		-0.169***
		(-7.10)
Size	0.390***	0.393***
	(90.56)	(91.06)
Recinv	0.016	0.015
	(0.50)	(0.50)
Lev	0.103***	0.111***
	(3.56)	(3.84)
Inde	0.0310	0.0280
	(0.38)	(0.34)
Dual	0.017*	0
	(1.90)	(0.00)
Board	-0.005*	-0.003
	(-1.68)	(-1.09)
Roa	-0.187*	-0.241**
	(-1.80)	(-2.32)
Big	0.611***	0.613***
	(33.89)	(34.09)
Audit	0.146***	0.135***
	(3.90)	(3.63)
_cons	5.071***	5.018***
	(49.35)	(48.36)
Year	control	control
Ind	control	control
N	11186	11186
R^2	0.579	0.581

5. Conclusions and suggestions

5.1 Research conclusion

In this study, based on the sample of A-share listed companies in Shanghai and Shenzhen stock markets from 2013 to 2018, the relationship among overconfidence of managers, non-executive directors and audit fees is empirically analyzed, and the following conclusions are drawn: （1） There is a significant positive correlation between overconfidence and audit cost.Because managers can't be completely rational, their overconfidence in personal business ability is easy to make them make irrational behavior. The higher the degree of overconfidence of managers, the higher the audit risk and the higher the audit cost.(2) The non-executive directors can effectively reduce the positive correlation between managers' overconfidence and audit costs.In an enterprise with a high proportion of non-executive directors, non-executive directors can effectively play the role of supervising the management, stop the irrational decision-making behavior of the management in time, improve the quality of accounting information of the enterprise, and then reduce the risks faced by the auditors, so as to regulate the overconfidence of the managers and the audit costs.

5.2 Related suggestions

Based on the above conclusion, this paper puts forward the following suggestions: (1) Improve the company's executive appraisal and employment mechanism.We should realize objectively that the psychological characteristics and cognitive behaviors of the management will affect the company's business decisions and risks. The listed companies should continuously strengthen the training and assessment of the management personnel, establish a sound company's decision-making mechanism, and form a mechanism of mutual supervision between the board of directors and the management and further verification by the external auditors.(2) In the study of the impact of the board of directors on the internal governance environment of the company, we should not only consider the supervision role of independent directors on managers, but also consider the supervision and governance effect of non-executive directors on managers, give full play to the strategy, supervision and other functions of non-executive directors, and promote the improvement and improvement of the corporate governance mechanism.

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