



Research on the Influence of Audit Quality on Enterprise Innovation

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Abstract. This paper takes China's A-share listed companies in non-financial industries in Shanghai and Shenzhen from 2007 to 2022 as research samples to explore the impact of audit quality on enterprise innovation, and on this basis, the impact of accounting conservatism on the relationship between audit quality and enterprise innovation. The results show that improving audit quality will promote the innovation level of enterprises; The introduction of accounting conservatism as a regulating variable will strengthen the role of audit quality in promoting enterprise innovation.

Keywords: Audit quality, Enterprise innovation, Accounting conservatism.

1 INTRODUCTION

In modern society, the separation of the two rights is the main feature of enterprises. In this case, the problem of information asymmetry is more serious. At this time, external auditing can ensure that the interests of the principals and agents of listed companies are not harmed, thus creating the demand for high-quality auditing. Audit quality refers to the quality of audit work, that is, the effectiveness of audit results to achieve audit objectives (Xu Zhengdan et al., 2004)^[1]. High-quality audit can alleviate the problem of information asymmetry in the capital market, ensure the authenticity and reliability of accounting information disclosure, protect the legitimate interests of investment beneficiaries, and ensure the good operation of the investment market. Therefore, audit quality is extremely important to the operation of the company.

As an external supervision mechanism, the impact of audit on enterprise innovation is not direct, but indirect. The higher the quality of audit services provided by auditors, the more likely they are to find out the misstatements and omissions in financial reports, making the financial reports of enterprises more reliable, thus gaining the trust and support of investors more easily, helping to alleviate the financing constraints, providing sufficient funds for enterprises to carry out innovative activities, and indirectly promoting enterprise innovation. Therefore, it is of great significance to study the influence of audit quality on enterprise innovation. Few people in this paper put accounting conservatism into their research framework. Therefore, taking accounting conservatism as a regulating variable provides a new perspective for academic circles and a new path for improving the innovation level of enterprises.

2 THEORETICAL ANALYSIS AND RESEARCH HYPOTHESIS

2.1 The Influence of Audit Quality on Enterprise Innovation

When auditing an enterprise, high-quality audit activities can find out the false data in the production and operation information of the enterprise in time, and the financial report audited by auditors can reduce the probability of misstatement and omission, thus improving the information quality of the financial report. On the one hand, auditors can better estimate the future income of enterprise R&D activities by transmitting these information with quality assurance to external investors and stakeholders; On the other hand, high-quality audit can send a signal to the outside world that the accounting information quality of the enterprise is reliable, the financial situation is good and the operating performance is stable, so that the enterprise enjoys a good reputation. Through the transmission of these information, investors can remain optimistic about the operating status of enterprises, thus alleviating the financing constraints and providing financial guarantee for enterprises to carry out R&D activities.

Auditors Xu Xinhua (2020)^[2] and Xu Jianwei (2020)^[3] conveyed the true information of the enterprise to all stakeholders and investors of the enterprise, so as to reduce the agency cost and information asymmetry. Accurately provide data for enterprise R&D projects, and promote enterprises to invest in R&D projects. Ko Eun (2018)^[4] pointed out that the better the quality of enterprise information system is, the more important it is for innovation coordination, and the quality of financial report has a positive role in promoting the future innovation of enterprises. To sum up, this paper puts forward the first hypothesis:

H1: Audit quality promotes enterprise innovation

2.2 The Influence of Accounting Conservatism on Audit Quality and Enterprise Innovation

The principle of conservatism requires enterprises to be cautious when recognizing income, and at the same time, timely and fully confirm possible losses. For auditors, sound financial statements mean that they can evaluate the financial status and operating results of enterprises more accurately and reduce audit risks. Secondly, accounting conservatism provides the necessary financial guarantee for enterprise innovation. Under the sound accounting principle, enterprises can evaluate the risks and benefits of innovative projects more objectively, and avoid blindly pursuing short-term benefits and ignoring long-term value. To sum up, this paper puts forward the first hypothesis:

H2: Accounting conservatism strengthens the role of audit quality in promoting enterprise innovation.

3 RESEARCH DESIGN

3.1 The Influence of Audit Quality on Enterprise Innovation

This paper selects the sample data of A-share listed companies in Shanghai and Shenzhen from 2007 to 2022, and screens the data to ensure the validity of the sample: excluding financial enterprises; Eliminate ST, *ST and companies with incomplete or abnormal financial data; Delete listed companies that delisted from the market between 2007 and 2022.

3.2 Variable Definition

Explained Variables. The explained variable in this paper is enterprise innovation. In this paper, the innovative input intensity refers to the processing method of He and Wintoki(2016), and the total R&D investment is standardized by taking the logarithm (RD) ^[5].

Explain Variables. The explanatory variable of this paper is audit quality. It is generally believed that the higher the audit fees charged by accounting firms, the higher the audit quality provided. Therefore, this paper uses Chengang Ye (2020)^[6] and Zhang Chuan (2020) ^[7]for reference to select audit fees as a substitute variable to measure audit quality.

Regulating Variable. The adjusting variable in this paper is accounting conservatism. Based on Basu model (Basu, 1997), Khan-Watts model (Khan and Watts, 2009) is adopted ^[8].

Control Variables. In order to better analyze the relationship between the main variables, Size, Lev, Quick, Growth, Board, Top1 and KZ as control variables, and introduces annual dummy variables to control their influence.

3.3 Model Building

Adopting regression method to study the relationship between audit quality and enterprise innovation; For the audit quality of regulatory variables, the cross-product term is added to the model to verify its regulatory effect.

To verify H1, take enterprise innovation as the explained variable and audit quality as the explained variable, and construct the following multiple linear regression model:

$$RD_{i,t}=\beta_0+\beta_1Audit_{i,t}+\gamma Control_{i,t}+\sum Year +\varepsilon_{i,t} \quad (1)$$

To verify H2, take enterprise innovation as the explained variable, audit quality as the explanatory variable, and accounting conservatism, as an adjustment variable of

audit quality and enterprise innovation, constructs the following multiple linear regression model.:

$$RD_{i,t} = \beta_0 + \beta_1 \text{Audit}_{i,t} + \beta_2 \text{C-Score}_{i,t} + \beta_3 \text{Audit}_{i,t} \times \text{C-Score}_{i,t} + \gamma \text{Control}_{i,t} + \sum \text{Year} + \varepsilon_{i,t} \quad (2)$$

4 EMPIRICAL TEST AND RESULT ANALYSIS

4.1 Analysis of Descriptive Statistical Results

From the descriptive statistical results in Table 1, the level of innovation investment among enterprises is quite different, which shows that the innovation ability of different enterprises is quite different, the innovation ability of listed companies is weak, so it is necessary to further improve the innovation ability of enterprises. Audit quality As can be seen from the table, the standard deviation is 0.645, which shows the difference of the fees paid by different companies in audit business.

Table 1. Descriptive statistic

Variables of interest	Value of observation	Mean value	Standard deviation	Median number	Maximum value	Minimum value
RD	31555	14.270	7.379	17.540	21.960	0
Audit	31555	13.670	0.645	13.590	15.790	12.430
C_Score	31555	0.108	0.763	0.053	3.936	-2.218
Size	31555	22.230	1.260	22.050	26.250	19.890
Lev	31555	0.431	0.200	0.427	0.884	0.057
Quick	31555	1.849	2.081	1.184	13.220	0.186
Growth	31555	0.163	0.377	0.107	2.343	-0.551
Board	31555	2.132	0.198	2.197	2.708	1.609
Top1	31555	34.770	14.780	32.630	74.240	8.482
KZ	31555	1.504	2.021	1.654	6.234	-4.364

4.2 Correlation Result Analysis

The results of correlation test show that most of them are significant at the level of 1%. In addition, the correlation coefficient between enterprise innovation (RD) and Audit quality (Audit) is 0.216, which shows that audit quality and enterprise innovation are positively correlated, and the hypothesis H1 is preliminarily verified. Moreover, the VIF multicollinearity test is carried out in this paper, and the results show that the VIF values of each mean are less than 3.08, which shows that the variables are independent of each other and there is no multicollinearity problem.

4.3 Analysis of Multiple Linear Regression Results

The Influence of Audit Quality on Enterprise Innovation. The regression results of audit quality on enterprise innovation are shown in the first column of Table 2. The r values are 0.306, respectively, which shows that the model has a good goodness of fit as a whole. The regression coefficient of audit quality to enterprise innovation is 1.347, and which is significantly positively correlated at 1% confidence level, which verifies hypothesis 1 well, that is, the higher the audit quality of enterprises, the more innovation investment of enterprises.

The Moderating Role of Accounting Conservatism. The regression results of accounting conservatism on audit quality and enterprise innovation are shown in the second column of Table 2. The regression coefficient of the interaction between audit quality and accounting conservatism is 0.089, which is significantly positively correlated at the confidence level of 10%. The two coefficients are consistent, that is, accounting conservatism promotes the relationship between audit quality and enterprise innovation, which verifies the hypothesis H2, that is, accounting conservatism has a regulatory effect between audit quality and enterprise innovation.

Table 2. Empirical analysis

	(1)	(2)	(3)	(4)
	RD	RD	RD2	RD3
Audit	1.347*** (15.168)	1.339*** (15.069)	0.259*** (11.558)	1.577*** (16.920)
C-Score		-1.268* (-1.908)		
Audit* C-Score		0.089* (1.854)		
_cons	-10.334*** (-10.862)	-10.211*** (-10.720)	-8.915*** (-36.221)	-4.396*** (-4.442)
Control Variables	control	control	control	control
Year	control	control	control	control
N	31555.000	31555.000	31555.000	24672.000
r ² _a	0.306	0.306	0.188	0.082

t statistics in parentheses * p < 0.1, ** p < 0.05, *** p < 0.01

5 ROBUSTNESS TEST

First, analysis of this paper, "Ln(1+ R&D investment)" is used to measure the innovation investment of enterprises, and it is replaced by "Ln(1+ total number of patent applications)" and recorded as RD2 during the robustness test. The regression results are shown in column (3) of Table 2. After replacing the explained variables, the regression coefficient is 0.259, which is significant at the level of 1%. Second, narrow

the sample range. In the main regression analysis of this paper, the sample is the A-share listed companies in Shanghai and Shenzhen from 2007 to 2022. During the robustness test, the time range of the sample is narrowed to listed companies from 2013 to 2022, which is recorded as RD3. The regression results are shown in column (4) of Table 2. After replacing the sample time, the regression coefficient is 1.577, which is significant at the level of 1%.

6 CONCLUSIONS AND SUGGESTIONS

This paper empirically tests draws the following conclusions: there is a significant positive correlation between audit quality and enterprise innovation, that is, with the improvement of audit quality, enterprise innovation increases significantly; Further analysis of the impact of accounting conservatism on the two shows that accounting conservatism will strengthen the role of audit quality in promoting innovation.

Therefore, it is necessary to improve audit quality and play a governance role. Enterprises pay attention to improving the objectivity and reliability of audit work. Auditors should seek truth from facts in project inspection and evaluation to ensure accuracy. Enterprises should also optimize the audit management system, improve the quality of auditors, and strengthen the research degree of audit accounting to improve the audit quality. Enterprises also should have a perfect internal governance mechanism to realize comprehensive supervision of management, so that management can fully consider the overall situation of enterprises and make decisions conducive to the long-term development of enterprises, thus increasing enterprise innovation activities. Enterprises should also establish a long-term innovation performance evaluation mechanism, grasp the progress and completion of enterprise innovation activities in real time, and realize the dynamic balance between enterprise innovation risks and benefits.

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