The Impact of Audit Quality on Enterprise Innovation Activities: an Empirical Study Based on Chinese Listed Companies

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Abstract

Based on data from A-share listed companies in China from 2016 to 2021, this article considers the impact of audit quality on corporate innovation activities, and explains its impact mechanism from the perspective of management power. The aim is to provide suggestions for enterprises, accounting firms, and government regulatory authorities to jointly improve the level of corporate innovation through multiple efforts. Empirical research has found that the audit quality of listed companies can significantly promote their innovative behavior. High quality external audits have a positive effect on the management rights of listed companies, and management rights play a moderating role between audit quality and enterprise innovation activities.

Keywords

Audit Quality; Enterprise Innovation; Management Power.

1. Introduction

In recent years, the country's emphasis and emphasis on innovation have made it a hot topic of discussion among all sectors of society. The report of the 20th National Congress of the Communist Party of China pointed out that "we should accelerate the implementation of the innovation driven development strategy, accelerate the realization of high-level technology, and achieve self-reliance and self-reliance as soon as possible." "Guided by national strategic needs, we should gather strength to carry out innovative and leading technology breakthroughs, and resolutely win the battle for key core technologies." On the one hand, the country continues to focus on innovation as a key point, and the strong advocacy for enterprise innovation boosts the confidence and enthusiasm of enterprises in innovation. The Opinions of the Central Committee of the Communist Party of China and the State Council on Deepening the Reform of the Science and Technology System and Accelerating the Construction of the National Innovation System strengthen the dominant position of enterprise technology innovation from a national perspective, and promote the close integration of science and technology with the economy; The Opinions on Strengthening the Main Body Position of Enterprise Technological Innovation and Comprehensively Enhancing Enterprise Innovation Ability provide policy guidance for further promoting the improvement of the industrial innovation system and promoting the reform of the scientific and technological system. The attention of the country has effectively stimulated the development of enterprise innovation activities. In June 2022, the Communist Party of China announced that China has officially entered an innovative country. In the past decade, the total social R&D investment has increased from 1.03 trillion yuan in 2012 to 2.79 trillion yuan in 2021, and the R&D intensity has increased to 2.44%. Chinese enterprise innovation has begun to take shape and entered a period of rapid growth. On the other hand, there are still shortcomings in the R&D and innovation activities of enterprises. The level of innovation investment by enterprises is uneven and unevenly distributed, and the risk of "bottleneck" becomes prominent when the external environment changes. Therefore, it is

imperative to comprehensively and meticulously improve the innovation level of the company, and the issue of enterprise innovation continues to receive attention from all sectors of society. Innovation activities are the key to the survival and development of enterprises, and their positive value for enterprise development has been widely recognized. Enterprise innovation is beneficial for improving product quality and winning market competitive advantages for the company. However, innovation activities have high risks, such as long R&D time, high investment costs, and slow R&D returns, which can affect the personal benefits of management. In order to maintain their own interests, the greater the power of management, the more likely it is to have a negative impact on the company's decision-making in innovation activities, leading to short-sighted behavior, which has a inhibitory effect on the company's innovation activities. On the other hand, modern butler theory believes that based on the self-discipline of operators, the interests of operators, shareholders, and other stakeholders are consistent. In terms of decision-making motivation driven by the "butler" mentality, the improvement of innovation level can bring excess profits to the enterprise while reflecting the value of management, and the enterprise management will actively invest in innovation. The academic community has varying understandings of the relationship between management power and innovation activities, therefore, discussing its impact on enterprise innovation from the perspective of management power is worth paying attention to.

The external audit department is an independent and professional third-party that can promote fair and truthful disclosure of accounting information by enterprises. According to the signaling theory, high-quality audit, on the one hand, represents the rationality of the enterprise's financial report and internal control, on the other hand, plays a normative role in the management's behavior, which can effectively inhibit its opportunism behavior. The greater the power of the company's management, the more serious the agency conflict may be. Therefore, high-quality auditing can improve the internal environment of the company, regulate management behavior, and constrain management rights. When dynamically selecting auditors, companies with greater management power are more likely to choose high-quality external auditors to improve audit quality.

Therefore, this article selects data from Chinese A-share listed companies from 2016 to 2021 to explore the relationship between audit quality, management rights, and the level of enterprise innovation activities. From the perspective of management rights, it further explains the impact mechanism of audit quality on enterprise innovation activities.

2. Literature Review and Hypothesis

In the past 20 years, the attention of the academic community to audit quality has continued to rise, reaching its peak in 2020. Although there has been a slight decline in attention in the past two years, this article believes that there is still significant room for exploration of the topic of audit quality. In recent years, with the country's emphasis on innovation, the academic community's research attention to enterprise innovation has continued to rise.

2.1. Audit Quality and Enterprise Innovation Activities

High quality audit report information disclosure can not only boost public sentiment towards enterprises engaged in innovation activities, alleviate corporate financing problems, effectively stimulate the willingness of enterprises to further improve innovation levels, but also benefit companies in promoting internal governance, reducing agency costs, and suppressing earnings management, thereby improving innovation performance. According to signal transmission theory and information asymmetry theory, high-quality audit reports convey good financial information of the company, reduce the risk of significant errors in financial information, reduce internal and external information asymmetry, and thus alleviate financing constraints

and enhance the liquidity of the company's funds, In order to promote the innovation activities of the company (Xu Jian-wei, Chen Yan-bin etc, 2020[1]; Wang Wen-na, Hu Bei-bei, et al.[2]). Cai Chun and his partners believe that high-quality auditing can effectively suppress the degree of earnings management in companies[3]. Strengthening internal control from the perspective of company reporting is beneficial for improving the efficiency of fund utilization and promoting the development of enterprise innovation activities. Yang Yi-wen et al. used bootstrap and stepwise OLS regression methods to verify that internal and external auditing directly and positively promotes innovation performance through knowledge accumulation and dissemination, while indirectly affecting innovation performance through strengthening organizational learning[4]. Yin Hong and Cao Qing[5] also proposed that the information provided by auditors when paying attention to risks related to innovation activities is conducive to the adjustment and promotion of company innovation activities,based on the audit demand insurance theory. In summary, the following assumption is proposed:

H1:Under other unchanged conditions, audit quality can motivate enterprises to engage in innovative activities.

2.2.   Management Power and Audit Quality

The economic supervision function and external governance ability of external audit[6] can soften the conflicts caused by agency issues in companies. The higher the audit quality, the more it can inhibit the management of earnings and constrain the management's power, In order to overcome the short-sighted behavior of management in innovation activities and promote the long-term growth of enterprise innovation activities (Chen Jianwei, Chen Yanbin et al., 2020[1]), Stewart et al[7] found that internal audit can also suppress management's self-interest behavior, increase innovation revenue, and ensure the smooth implementation of innovation activities. Research by Mersland et al. has shown that more powerful CEOs have more decision-making freedom and increase the risk of making extreme decisions, exhibiting low performance[8]. For innovative R&D activities, their own risks are high, information asymmetry is high, and they are uncertain and irreversible. Due to the existence of externality, spillover effects not only affect innovative technologies[9]. Bebchuk and Fried proposed the management power theory for the first, which suggests that due to agency issues, management can manipulate their power for personal gain. The greater the power of the management, the higher the tendency of the company to violate regulations (Wang Dongqing et al., 2022[10]), which has a negative impact on innovation performance. If the management power is too large or abused without external supervision, the possibility of earnings management and adverse selection or moral hazard of the management will increase, thus inhibiting the improvement of enterprise innovation level. Yin Hong et al.[5] validated the positive significance of effective internal control and external supervision in improving corporate governance capabilities and innovation levels based on empirical analysis of company data in the Shanghai Stock Exchange. Xie Sheng-wen et al. (2015) verified through empirical research on A-share companies from 2007 to 2012 that the greater the power of management, the more inclined they are to choose high-quality external audits[11], and high-quality auditors help improve the audit quality of listed companies[12]. Based on the above, the following assumption is proposed:

H2:The power of management has a parallel relationship with high-quality auditing.

2.3.   Audit Quality, Management Power and Enterprise Innovation

At present, the general view in the academic community on the relationship between management power and enterprise innovation activities is based on the butler theory that management power has a positive promoting effect on enterprise innovation investment and efficiency. Wang Lijing[13] empirically found that there is a significant positive correlation between enterprise innovation efficiency and management power, and financial flexibility plays a moderating role in it. Song Zai-ke et al.[14] also believe that management power has a

promoting effect on enterprise innovation investment, and the positive impact becomes more significant with the degree of market competition. Wang Nan et al. measured from four dimensions: organizational power, owner power, reputation power, and expert power that CEOs have greater power, which is beneficial for unleashing their sense of stewardship and promoting enterprise research and development investment[15]. But at the same time, Bai Gui-yu et al.[16] found that management power has a differentiated decision-making effect on technological innovation and market innovation, and management power has a promoting effect on technological innovation, and it has a inhibitory effect on market innovation, on the basis of the analysis of the Motivation and Regularity of Enterprise Innovation Decision. Based on the above, the following assumption is proposed:

H3:The power of management plays a moderating role between audit quality and enterprise innovation activities, that is, management promotes enterprise innovation through direct and indirect coupling with audit quality.

The possible contribution of this article lies in the fact that most scholars focus on the relationship between audit quality and innovation activities, and relatively few combine the internal structure of enterprises to study the impact of innovation activities on audit quality. Therefore, the possible contributions of this article include: firstly,this article extends the research on the power of internal management in enterprises from the perspective of external auditing; Secondly, the empirical model is developed for the mechanism of mesomeric effect, showing the impact mechanism of audit quality promoting enterprise innovation from the perspective of management power, adding empirical evidence for the economic supervision function and internal governance function of audit; Thirdly, by selecting data from Chinese A-share listed companies, reference is provided for the improvement of government innovation policies, improvement of audit quality, effective regulation of management behavior, and promotion of enterprise innovation level.

3. Sample Description and Empirical Model Setting

3.1. Sample selection and data sources

This paper uses the panel data of all A-share listed companies from 2016 to 2021 as the original sample. The sample data of listed companies are from Guotai'an and wind databases. The accounting firms are assigned with reference to the latest evaluation rankings of accounting firms to select the top eight domestic and overseas accounting firms. The further screening process of the sample is as follows: Firstly, in order to prevent the interference of abnormal financial indicators in the financial industry on the empirical results of the article, this article selects six industry codes based on CSMAR, excluding the financial and real estate industries; Secondly, in order to obtain more accurate financial data and avoid interference with various indicators due to poor business operations, samples from ST company during the research period were excluded; Thirdly, in order to eliminate the impact of extreme values on empirical analysis, this article applies a 1% winsorize treatment to all continuous variables. Finally, delete the enterprises with missing variables required in this article.

3.2. Explanatory variable: audit quality

Audit quality is the dependent variable, represented by AbsDA.

Audit quality is the level of audit work, which can be measured from two dimensions: the quality of audit work and the quality of audit results. The professional competence and independence of auditors are two key variables. On the one hand, large-scale accounting firms have an inherent economic motivation to improve the quality of audit reports in order to maintain the brand (DeAngelo, 1991[17]); On the other hand, large-scale accounting firms have auditors with various types of expertise, which can cover multiple fields of business, have

higher professional competence, and use their personnel advantages to maintain high independence. Therefore, to a certain extent, the size of the accounting firm responsible for auditing tasks can represent the quality of the audit. This article adopts the Top eight accounting firms and the Top four accounting firms as a measure of high-quality auditing, and assign a value to it, in other words, if the enterprise hires the Top eight or four, the value is 0, otherwise it is 1. In addition, audit quality is also related to internal management of the company, which can be replaced by earnings quality. The smaller the degree of earnings being managed and the controllable profit, the higher the audit quality (Qi Jiang-na et al., 2004[ ]). Therefore, referring to the research results of Qi Jiang-na et al.[18], a modified Jones model was used to estimate the manipulable profit, and the predicted residual was the manipulable accrued profit DA (Kothari et al., 2004[19]), using the absolute value AbsDA of DA to measure audit quality. The lower AbsDA, the higher the audit quality.

In summary, the explanatory variables are represented as:

$$\frac{TA_{i,t}}{Asset_{i,t-1}} = \alpha_1 \frac{1}{Asset_{i,t-1}} + \frac{\Delta REV_{i,t} - \Delta REC_{i,t}}{Asset_{i,t-1}} + \frac{PPE_{i,t}}{Asset_{i,t-1}} + \alpha_2 kuaisuo_{i,t} + \varepsilon_{i,t} \qquad (1)$$

Table 1 Symbol Definition

Variable Symbol	Definition
$TA_{i,t}$	The total accrued profit of the listed company i in the t-period is equal to the operating profit - net cash flow from operating activities
$Asset_{i,t-1}$	Total assets of listed company i at the end of period t
$kuaisuo_{i,t}$	Assignment of audit accounting firms selected by listed company i in the t-th period
$\Delta REV_{i,t}$	Changes in revenue from the main business of listed company i in the t-th and t-1st periods
$\Delta REC_{i,t}$	Changes in accounts receivable of listed company i for periods t and t-1
$PPE_{i,t}$	Original value of fixed assets of listed company i in period t
AbsDA	Absolute value of controllable accrued profit DA

3.3. Explanatory variable: Enterprise innovation

This paper uses the number of all patent applications of listed companies in the current year, that is, the natural logarithm of the sum of invention patents, utility model patents and design patents applied by listed companies in the current year plus 1 to measure the innovation activities of enterprises. This is because the patent application cycle is long, and it usually takes about two years from patent application to final authorization, which leads to a significant lag in patent authorization data. Considering that patented technology may have an impact on enterprise performance during the application period, this article uses patent application data lnpatenti to more timely examine the impact of enterprise tax planning.

In addition, enterprise research and development expenses can also be included in the evaluation of innovative activities of enterprises. Due to the fact that R&D expenses in enterprises are an absolute indicator related to the size of the enterprise, they are treated as the ratio of research expenses to current year sales revenue as a measurement indicator.

3.4. Moderating variable: management power

Management power (Poweri, t): This article refers to the practice of Wang Dong-qing et al. (2022)[12] to concretize management power. The specific definitions and explanations are shown in Table 2. All 7 indicators are dummy variables, and their weighted mean is used as a measure of management power.

Table 2 Definition and Interpretation of Management Power Variables

Power Dimension	Variable Symbol	Indicator Definition
Organizational Power	Dual	When the management concurrently serves as the chairman, taking as1; otherwise, as 0
	Insiderdir	If the manager is an internal director of the company, taking as 1, otherwise, as 0
Expert Power	Team	If the manager's tenure exceeds the industry median, taking as 1; otherwise, as 0
Ownership Power	Dum-share	When the management holds shares in the company, taking as 1; otherwise, as 0
	Dum-inst	If the company's institutional shareholding is lower than the industry median, taking as 1; otherwise,as 0
Reputation Rights	High-edu	If the management has a graduate degree or above,thinking the score as 1, otherwise, as 0
	Other-job	When the management team works in other companies at the same time, taking as 1; otherwise, as 0

3.5. Controlled Variable

In terms of control variables, refer to the classic practice of existing literature, and set control variables, specifically including enterprise size (measured by the natural logarithm of the total assets of the listed company at the end of the current year), asset liability ratio (Level, measured by the proportion of the total liabilities of the listed company in the total assets of the current year), enterprise age (Age, measured by the company's years of listing), enterprise operating performance (ROA, measured by the return on assets of the listed company in the current year) Cash ratio (measured by the ratio of cash held by the listed company in the current year), board independence (measured by the proportion of independent directors in the current year), board size (measured by the shareholding ratio of the listed company's board of directors in the current year) Family business (1 if the listed company is a family business, otherwise 0) and enterprise ownership (SOE, 1 if the listed company is a state-owned enterprise, otherwise 0). In summary, the main variables and explanations in this article are shown in Table 3.

Table 3 Related variables and descriptions

Variable type	Variable	Variable Symbol	Variable Definition
Explained Variable	Enterprise Innovation	Inpatenti	The number of patents applied for that year plus 1 to be processed with logarithm
Explanatory variable	Audit Quality	AbaDA	Absolute value of maneuverability accruals DA
Adjusting variables	Management power	Poweri,t	Equal weight mean of 7 kinds of power dimension dummy variables
Control variable	Enterprise size	size	Natural logarithm of total assets at the end of the current year
	Debt ratio	Leverage	The proportion of total liabilities to total assets for the year
	Company age	Age	Years of listing of the company
	Profitability	ROA	Return on assets of the year
	Cash ratio	Cash	Cash held ratio of the year
	Board independence	Indratio	Proportion of independent directors in the current year
	Board size	Boardsize	Shareholding ratio of the board of directors in the current year
	Family company	Family	If the listed company is a family owned enterprise, take 1, otherwise it will be 0
	Ownership	SOE	If the listed company belongs to a state-owned enterprise, taking as 1, otherwise as 0

3.6. Empirical Model Setting

In order to verify the theoretical hypothesis proposed above, this paper will use the panel data of listed companies to empirically analyze the impact of audit quality on enterprise innovation activities, as shown below:

Model 1:

$$Inpatent = \alpha_0 + \alpha_1 AbsDA_{i,t} + \alpha_2 X_{i,t} + Year\_FE + \varepsilon_{,t} \tag{2}$$

Model 2:

$$AbsDA_{i,t} = \beta_0 + \beta_1 Power_{i,t} + \beta_2 X_{i,t} + Year\_PE + \varepsilon_{,t} \tag{3}$$

Model 3:

$$Inpatent = \gamma_0 + \gamma_1 AbsDA_{i,t} + \gamma_2 Power_{i,t} + \gamma_4 X_{i,t} + Year\_PE + \varepsilon_{,t} \tag{4}$$

In the above equation, the subscripts i and t respectively represent the listed company and the accounting year. Inpatenti measures enterprise innovation activities; AbsDAi, t is one of the core explanatory variables of this article, namely audit quality; Poweri,t refers to the power of management The constant terms of the three models in sequence The coefficients of audit quality AbsDAi, t in the three models; Xi, t are a series of control variables used to control

various financial and governance characteristics at the enterprise level. Represents the fixed effect of the year and is a random perturbation term. Therefore, based on the previous theoretical assumption, if the parameters in Model 1 are significantly negative, it indicates a positive correlation between audit quality and enterprise innovation activities, thus confirming Hypothesis 1; If the parameters of the variable $AbsDA_{i,t}$ in Model 2 are significantly negative, it indicates a positive correlation between high-quality auditing and management power, thus confirming Hypothesis 2; If the coefficient of the moderating variable $Power_{i,t}$ in model 3 is significantly positive, and the parameter of the variable AbsDA is also significant, then the moderating role of management rights between audit quality and enterprise innovation activities is confirmed, and hypothesis 3 is confirmed.

4. Empirical results

4.1. Basic empirical Results

4.1.1. Descriptive statistics analysis

The descriptive statistics of variables are as follows.

Table 4 Descriptive statistics of variables

	Number of samples	Mean	Standard deviation	Min	Media	Max
Inpatenti	14886	3.081	1.769	0	3.219	9.702
AbsDA	14886	.052	0.077	0	.033	2.054
Pcn yanfa	14886	.044	0.053	0	.034	1.259
Power	14886	.516	0.166	0	.56	.89
Size	14886	22.426	1.296	18.393	22.271	28.636
Leverage	14886	.42	0.196	0	.414	3.648
Age	14886	12.426	7.478	.005	10.433	31.082
ROA	14886	.037	0.081	-1.859	.038	.816
Cash	14886	1.009	1.605	.001	.55	38.181
Indratio	14886	.377	0.056	.143	.364	.8
Mshare	14886	.122	0.179	0	.008	.83
Boardsize	14886	.117	0.174	0	.005	.83
Family	14886	.603	0.489	0	1	1
SOE	14886	.336	0.473	0	0	1

Note: The observed values are at the company level. The brackets indicate the robust standard error of heteroscedasticity* Significantly at statistical levels of 1%, 5%, and 10%, respectively.

From Table 4 above, it can be seen that when AbsDA, the absolute value of controllable accrued profit DA, is used to measure audit quality, the smaller AbsDA, the better the audit quality, and the higher the audit quality. This indicates that the audit quality of listed companies is severely polarized, and the audit quality of listed companies needs to be extremely high. The average value of enterprise innovation is 3.081, with a difference of 9.702 between the minimum and maximum values, and a standard deviation of 1.769. This indicates that there is a significant difference in innovation ability among A-share listed companies, and generally, innovation ability is not strong. Therefore, it is still necessary to increase innovation efforts and improve innovation levels.

4.2. Correlation test

Further, before the empirical regression analysis, it is also necessary to analyze the correlation between the main research variables to prevent the model from being unidentifiable due to the complete collinearity between the control variables. The correlation test results between control variables are shown in Table 5. From Table 5, it can be seen that there is no complete linear relationship between the core explanatory variables and various control variables, so there is no systematic bias in the statistical inference of this article due to the high collinearity problem.

Table 5 Correlation coefficient matrix of each variable

	Absda	Size	Leverage	Age	ROA	Cash	Indratio	Mshare	Boardsize	Family	SOE
Absda											
Size	-0.13*										
Leverage	0.10*	0.46*									
Age	-0.03*	0.39*	0.25*								
ROA	-0.51*	0.06*	-0.32*	-0.07*							
Cash	-0.02*	-0.24*	-0.50*	-0.09*	0.15*						
Indratio	0.03*	-0.01*	-0.00	-0.04*	-0.02*	0.01*					
Mshare	0.02*	-0.33*	-0.24*	-0.54*	0.11*	0.12*	0.06*				
Boardsize	0.02*	-0.32*	-0.24*	-0.53*	0.11*	0.12*	0.07*	1.00*			
Family	0.08*	-0.34*	-0.23*	-0.50*	0.04*	0.07*	0.05*	0.48*	0.48*		
SOE	-0.09*	0.35*	0.23*	0.48*	-0.03*	-0.07*	-0.05*	-0.45*	-0.45*	-0.88*	

Note: The observed values are at the company level. The brackets indicate the robust standard error of heteroscedasticity* Significantly at statistical levels of 1%, 5%, and 10%, respectively.

4.3. Regression result analysis

The benchmark regression results of the central empirical model in this article are shown in Table 6.

Table 6 Regression results of Model 1, Model 2, and Model 3

VARIABLES	Model1 lnpatenti	Model2 AbsDA	Model3 lnpatenti
AbsDA	-0.854***	-	-0.828***
	(0.187)	-	(0.187)
Power	-	-0.010***	0.559***
	-	(0.004)	(0.089)
Size	0.718***	-0.004***	0.716***
	(0.012)	(0.001)	(0.012)
Leverage	-0.267***	-0.002	-0.260***
	(0.092)	(0.007)	(0.092)
Age	-0.032***	0.000	-0.031***
	(0.002)	(0.000)	(0.002)
ROA	0.326*	-0.484***	0.340*
	(0.184)	(0.035)	(0.183)
Cash	-0.058***	0.001***	-0.057***
	(0.011)	(0.000)	(0.011)
Indratio	0.078	0.019**	0.053
	(0.220)	(0.010)	(0.220)
Mshare	4.456***	0.029	4.318***
	(0.685)	(0.030)	(0.681)
Boardsize	-3.639***	-0.019	-3.640***
	(0.703)	(0.031)	(0.699)
Family	-0.142**	0.002	-0.220***
	(0.059)	(0.003)	(0.061)
SOE	-0.246***	-0.012***	-0.270***
	(0.063)	(0.003)	(0.063)
Constant	-12.410***	0.154***	-12.580***
	(0.274)	(0.014)	(0.275)
Observations	14,886	14,886	14,886
R-squared	0.260	0.276	0.262

Note: The observed values are at the company level. The brackets indicate the robust standard error of heteroscedasticity* Significantly at statistical levels of 1%, 5%, and 10%, respectively.

The first column of Table 6 shows the regression results of Model 1, the second column shows the regression results of Model 2, and the third column shows the regression results of Model 3. From Table 6, it can be seen that the regression coefficient of Model 1 is -0.854, indicating a positive correlation between audit quality and corporate activities at the 1% significance level. Hypothesis 1 is valid; The regression coefficient of Model 2 is -0.01 and significant at the 1% significance level, indicating a positive correlation between audit quality and management power. This indicates that management power does change in the same direction as audit quality, indirectly reflecting the signal transmission function and governance function of external audit; From Table 6, it can be seen that the regression coefficient of management power on innovation activities is significantly positive, and the regression coefficient of audit quality is significantly negative at the 1% significance level, indicating that management power

not only directly affects enterprise innovation, but also indirectly affects enterprise innovation through the improvement of audit quality. This proves that management power plays a moderating effect between audit quality and enterprise innovation activities. Hypothesis 3 is valid.

4.4. Robustness test

Next, robustness test was carried out. The first robustness test conducted in this paper is to narrow the sample range. In the sample used in the previous model, listed companies covered multiple industries including manufacturing, construction, electricity, heating, gas and water production and supply. Compared to other industries, manufacturing requires higher technology and innovation levels are more sensitive to the impact of this industry. Therefore, referring to the approach of Chen Fang-ling et al.[20], we narrowed the sample's range, selecting the manufacturing industry as the regression sample, and conducted benchmark regression results testing on it. Finally, the second robustness test is endogenous test. Referring to previous research practices, the explanatory variables, intermediary variables and control variables were lagged and regressed again to further verify the robustness of its research results. The results of the robustness test are basically consistent with the above, so it can be said that the research conclusions of this paper are robust.

5. Conclusion and inspiration

This article selects data from A-share listed companies in China from 2016 to 2021 as a sample to explore the impact of audit quality on corporate innovation activities, and further examines the moderating effect of management power in it. The empirical results indicate that, under the same other conditions, audit quality can motivate enterprises to engage in innovative activities; The power of management plays a moderating role between audit quality and enterprise innovation activities, that is, external audit has an economic supervision function. The greater the power of management, the stronger the motivation of listed companies to improve audit quality, which helps to improve the audit quality of the company and thus benefits the improvement of innovation performance and efficiency.

From the above conclusions, we can get the following enlightenment: First, listed companies should optimize their internal governance structure, reasonably allocate the power of management, establish relevant supervision mechanisms, and avoid adverse selection of management. Especially when the effectiveness of the company's internal control and supervision mechanism is not strong, the risk of opportunism behavior of the management increases, and the management is more inclined to adverse selection to meet their own needs or achieve short-term assessment goals, which inhibits the improvement of the company's innovation ability. Therefore, listed companies should establish effective supervision mechanisms and fully stimulate the management's "butler spirit". Secondly, accounting firms should improve audit quality and ensure the healthy and innovative operation of enterprises. External audit, as a third-party independent department, plays a certain supervisory role in enterprises. Therefore, providing high-quality audit services can avoid issues such as power abuse and surplus operation, thereby ensuring that enterprises have a high-quality innovation environment. Therefore, accounting firms should strive to enhance their professional competence, professional literacy, and maintain their independence, providing high-quality audit services to enterprises, and providing reliable financial information to the public. Finally, the state should strengthen its supervision of audit work. The implementation of audit work should also receive supervision from the market and relevant departments to optimize the audit service environment. Therefore, the government should take effective measures to strengthen the supervision of accounting firms to prevent them from being pressured by clients and damaging the quality of auditing. In addition, relevant departments should regularly

inspect audit work to investigate whether there are any violations of discipline and discipline in the firms. Once verified, punishment must be increased to ensure the healthy operation of external audit work and better play the economic supervision function of external audit.

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