



Analysis of the Influence of Financialization on Audit Fees Based on Multidimensional Fixed Effect Model

Shuhui Liu^(✉)

School of Economics and Management, China University of Petroleum (Beijing), Beijing, China
Ashlyn19@163.com

Abstract. Nowadays, the financialization trend of corporate economic development is getting stronger than ever before. Therefore, this paper constructs a multi-dimensional fixed effect model that uses Stata15 for empirical analysis to study the impact of corporate financialization on audit fees. It is found that the impact of corporate financialization on audit fees shows a significant positive correlation. At the same time, this paper conducts a heterogeneous analysis based on the nature of property rights and the life cycles of the enterprise and obtains relevant conclusions.

Keywords: Corporate Financialization · Audit Fees · Corporate Life Cycle

1 Introduction

Starting in the early 2000s, many scholars such as Krippner (2005) believe that corporate financialization is an important trend in world economic development, which shows that real production is giving way to the financial industry [5]. Since 2017, the party and government of China have repeatedly emphasized the need to balance the balanced relationship between the financial industry and the real economy in major meetings and documents, guide a virtuous circle between the two, and strictly prevent financial systemic risks. Therefore, exploring the financialization of enterprises is of great significance to Chinese economic development and transformation.

Auditing is a tool for investors and management to improve the efficiency of decision-making, and it plays an extremely important role in the economic market. However, in recent years, the financial market has continued to develop, and the ratio of corporate financial asset allocation has also been increasing. Meanwhile, business models have become more and more complex, which has increased the risk and difficulty of audit work.

Therefore, how do the audit fees change when the degree of financialization increases? Few studies have given clear answers. Therefore, this article attempts to explore the relationship between corporate financialization and audit fees through empirical research methods. At the same time, the paper will analyze the heterogeneity.

2 Theoretical Analysis and Research Hypothesis

Since more and more enterprises are desired to pursue short-term profits from financialization, so that this will not be conducive to the company's healthy development in the long run. Thus, financialization, under this motivation, will have a crowding-out effect on the production of enterprises, which may inhibit the production of enterprises and improve corporate finances risk at the same time, which is not conducive to the long-term development of enterprises.

Therefore, when the crowding-out effect of corporate financialization dominates, corporate financialization will squeeze out research and development expenditure. Meanwhile, managers will invest capital in speculative and profit-seeking behaviors. Therefore, if the company has a loss in investment when operating for a long time and then affecting the interests of investors and the actual controllers of the company's capital, companies will deliberately conceal losses to show the illusion of good financial performance. At this time, according to the deep pocket theory, given the research of Francis, J. R et al. (2013), higher business complexity and financial risks of the audited company will increase the auditing risk premium [3]. Thus, to reduce auditors' losses that audit errors may bring to themselves, the overall audit fees will be increased.

Based on the above analysis, research hypothesis 1 is proposed:

H1: The higher the degree of corporate financialization is, the higher the audit fees will be.

3 Research and Design

3.1 Sample Selection and Data Sources

The samples of this paper are 3,962 non-financial companies listed on A-shares, and the range is from 2015 to 2019. After excluding samples from ST, ST* companies, and missing data information, 7,294 valid samples were obtained. At the same time, this paper performs Winsor tailing processing for all continuous variables in 1% and 99% quantiles.

The data in this article comes from the Dibo database and the CSMAR database, and the data processing uses EXCEL and STATA15 software.

3.2 Definition of Key Variables

Audit fees. The dependent variable is the audit fee (LNFFEE), measured by the natural logarithm of the audit fee.

Degree of financialization. This paper mainly studies the impact of corporate financialization on audit fees, so the independent variable is the degree of corporate financialization (FIN), measured by the method of Du Yong (2019) [2], and the specific definition is shown in the variable definition table (Table 1).

Control variables. To reduce the impact of other factors, this paper refers to the components of audit pricing to set control variables. The specific variable definitions are shown in the variable definition table (Table 1).

Table 1. Variable Definition

Variable types	Main variables	Variable	Variable definitions
Dependent variable	Audit fees	Lnf _{fee}	The natural logarithm of the lagging audit fee
Independent variable	Financialization degree	Fin	Current period (trading financial assets + loan and advance amount + derivative financial assets + held-to-maturity investment + available-for-sale financial assets + investment real estate)/total assets
Control variables	Company size	Size	The natural logarithm of the company's total assets in the current period
	Company solvency	lev	Total liabilities/total assets at the end of the current period
	Return on assets	roa	Net profit for the period/total average assets
	Business complexity	recinv	(Accounts receivable + inventory)/total assets
	Current ratio	liquidity	Total current assets/total current liabilities
	Time to market	age	Time to market this year
	Accounting firm size	big4	If the sample is the Big Four accounting firm, take 1, otherwise, take 0
	Industry	ind	If the sample belongs to this industry, take 1; otherwise, take 0
	Year	year	If the sample belongs to this year, take 1; otherwise, take 0
Grouping variables	Nature of property rights	SOE	If the sample is a state-owned enterprise, take 1; otherwise take 0
	Growth period	L1	If the sample is the growth period, take 1; otherwise, take 0
	Maturity period	L2	If the sample is in the mature period, take 1; otherwise, take 0
	Decline period	L3	If the sample is a decline period, take 1; otherwise, take 0

3.3 Model Construction

This paper builds three models to verify two different hypotheses:

Hypothesis 1 is verified by model 1 (1):

$$\begin{aligned} Lnfee_{i,t+1} = & \alpha_0 + \alpha_1 Fin_{i,t} + \alpha_2 Lnsize_{i,t} + \alpha_3 Lev_{i,t} \\ & + \alpha_4 Roa_{i,t} + \alpha_5 Recinv_{i,t} + \alpha_6 Liquidity_{i,t} + \alpha_7 Age_{i,t} \\ & + \alpha_8 Big4_{i,t} + \Sigma Year + \Sigma Industry + \mu_i + \varepsilon_{i,t} \end{aligned} \quad (1)$$

This paper selects the dependent variable that is one period lagging for regression, that is, the audit fee uses $t + 1$ period data, and the independent variable and other control variables use t period data. This is because the lagging audit fee is linearly related to the previous audit fee, and it is not directly related to the degree of corporate financialization in the same period. Therefore, the lagging audit fee can be used to solve the endogenous problem for the dependent variable.

4 Empirical Test Results

4.1 Descriptive Statistics

Table 2 shows the descriptive statistical results of the variables used in this article. The effective observation value in this article is 7294. This article explains that the variable audit fee (LNFEED) is measured by the natural logarithm of the audit fee. The standard deviation of 0.695 indicates that the audit fee difference between different companies in the sample is quite different. Besides, the average value of the degree of corporate financialization (FIN) is 0.044. The maximum value of financialization is 0.427, and the minimum value is zero, which shows that the financialization degree of different companies in the sample is also quite different, but the average financialization degree is low. The data of this paper and existing scholars are in the same magnitude, so the data used in this article can be considered reasonable and effective.

4.2 Correlation Analysis

The results of the correlation analysis by selecting some of the main variables in this paper are shown in Table 3. The correlation coefficients between those variables are all lower than 0.8, which shows that the selection of variables in the article is appropriate and there is no serious multicollinearity problem. Observing the correlation between the degree of financialization and audit fees, we can find that the two show a significant positive correlation at the level of 5%, which shows that there is a correlation between financialization and audit fees.

4.3 The Results of the Impact of Corporate Financialization on Audit Fees

The regression results are shown in Table 4 on the following page. Column (1) in the table only includes the independent variable, the degree of corporate financialization, column (2) includes the control variables of the company's financial indicators, industries, and

Table 2. Overall Descriptive Statistics of Variables

	Obs	Mean	Std. Dev.	Min	Max
lnfee	7294	14.005	0.695	12.766	16.51
fin	7294	0.044	0.076	0	0.427
lnsize	7294	22.489	1.295	20.145	26.434
lev	7294	0.433	0.196	0.067	0.877
roa	7294	0.037	0.061	-0.28	0.193
recinv	7294	0.273	0.159	0.011	0.725
liquidity	7294	2.192	1.882	0.335	12.228
age	7294	11.861	7.395	2	30
big4	7294	0.069	0.254	0	1
SOE	7294	0.311	0.463	0	1
L1	7294	0.209	0.407	0	1
L2	7294	0.586	0.493	0	1
L3	7294	0.205	0.404	0	1

Table 3. Correlation Analysis Results

	lnfee	fin	lnsize	lev	roa	recinv	liquidity	age	Big4
lnfee	1								
fin	0.029**	1							
lnsize	0.766***	-0.008	1						
lev	0.416***	-0.091***	0.521***	1					
roa	-0.015	0.009	0.015	-0.321***	1				
recinv	-0.034	-0.152***	-0.004	0.286***	-0.053***	1			
liquidity	-0.256***	0.105***	-0.299***	-0.540***	0.123***	-0.095***	1		
age	0.288***	0.180***	0.391***	0.310***	-0.068***	-0.042***	-0.160***	1	
big4	0.456***	0.001	0.377***	0.126***	0.039***	-0.079***	-0.070***	0.098***	1

years; In the column (3), all control variables, industries, and years have been added. From column (1) to column (3), R^2 increased from 0.09% to 63.59%, indicating that the choice of control variables is more reasonable.

This article mainly explains the results in column (3). From column (3), it can be found that the regression coefficient of the degree of corporate financialization is 0.2176, which is significant at the level of 1% and reflects that the increase in the degree of corporate financialization will positively and significantly affect audit fees. Therefore, the H1 hypothesis is verified, and the coefficients of other variables are similar to those in the existing literature.

Table 4. The Regression Results of Impact of Enterprise Financialization on Audit Fees

Variables	(1)	(2)	(3)
	lnfee	lnfee	lnfee
fin	0.2616** (0.1049)	0.2270*** (0.0692)	0.2176*** (0.0685)
lnsize		0.4053*** (0.0050)	0.3635*** (0.0052)
lev		0.0281 (0.0395)	0.0649* (0.0385)
roa		-0.1149 (0.0764)	0.1316* (0.0736)
recinv		0.0109 (0.0381)	0.0370 (0.0369)
liquidity		-0.0051** (0.0024)	-0.0062*** (0.0023)
age			0.0006 (0.0008)
big4			0.5172*** (0.0217)
Industry		YES	YES
year		YES	YES
_cons	14.0486*** (0.0092)	4.8970*** (0.1074)	5.7731*** (0.1110)
N	7294	7294	7294
R2	0.0009	0.6074	0.6359

Note: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$; robust standard errors in parentheses

4.4 Further Discussion

4.4.1 Group Discussion on the Nature of Property Rights

The results of the group discussion according to the nature of property rights are shown in columns (1) and (2) of Table 5. The results show that when the nature of property rights is a state-owned enterprise, the degree of corporate financialization has a positive and significant impact on audit fees. However, when the nature of property rights is non-state-owned, financialization has no significant impact on audit fees. According to the study of S. Walter et al. (2008), this may be due to the strong external financing constraints faced by non-state-owned enterprises [6]. Meanwhile, one of the motives of financialization is to reduce future operating risks and ease financing pressure, so it will not significantly increase the audit risk, and thus the audit fees will not be significantly

Table 5. Grouped Regression Results

Variables	Infee				
	Non-state-owned enterprise	State-owned enterprise	Growth period	Maturity period	Decline period
	(1)	(2)	(3)	(4)	(5)
fin	0.1377 (0.0847)	0.3565*** (0.1193)	-0.0417 (0.1495)	0.2385*** (0.0851)	-0.0408 (0.1565)
lnsize	0.3331*** (0.0069)	0.4137*** (0.0092)	0.3423*** (0.0140)	0.3793*** (0.0073)	0.3237*** (0.0124)
lev	0.1503*** (0.0453)	-0.0567 (0.0764)	0.0445 (0.1114)	0.0422 (0.0557)	0.1250 (0.0785)
roa	-0.0150 (0.0753)	-0.6464*** (0.2236)	0.0829 (0.2280)	-0.2759** (0.1156)	-0.0260 (0.1068)
recinv	0.0249 (0.0437)	0.0718 (0.0685)	0.1207 (0.0960)	0.0543 (0.0508)	-0.2336*** (0.0738)
liquidity	-0.0073*** (0.0023)	0.0013 (0.0069)	-0.0116 (0.0093)	-0.0086** (0.0035)	-0.0075** (0.0035)
age	0.0050*** (0.0011)	0.0022 (0.0016)	-0.0004 (0.0021)	-0.0005 (0.0010)	0.0009 (0.0017)
big4	0.5211*** (0.0309)	0.4864*** (0.0327)	0.6295*** (0.0850)	0.4904*** (0.0273)	0.5292*** (0.0652)
Industry	YES	YES	YES	YES	YES
Year	YES	YES	YES	YES	YES
_cons	6.3790*** (0.1455)	4.6296*** (0.2032)	6.3014*** (0.2779)	5.7651*** (0.1526)	6.7689*** (0.2596)
N	4976	2318	1632	4139	1523
R ²	0.5521	0.6921	0.5403	0.6839	0.5384

Note: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$; robust standard errors in parentheses

increased. When the property right is state-owned property, the agency problem in state-owned enterprises may be more serious, and the supervision is insufficient. Therefore, when the degree of financialization of the enterprise increases, the audit risk will rise, and the audit fee will also be increased.

4.4.2 Group Discussion of Different Life Cycles

Since companies face different problems and development goals when they are in different life cycles, the direction of cash flow investment is also different. According to the theory of enterprise life cycle, this paper draws on Dickinson (2011) to divide the sample

companies into three types: growth period (L1), maturity period (L2), and decline period (L3) [1]. (Enterprises in the initial stage cannot enter the A-share main board listing, so this paper does not consider the initial stage of enterprises). After grouping regression according to Model 1, the regression results are shown in Table 5.

According to the results of columns (3) and (5) of Table 5, when a company is in the period of growth and decline, the impact of corporate financialization on audit fees is not significant. This is because companies still face strong external financing constraints during the growth period, and external funds are limited. Also, since internal funds need to be invested in enterprise production and innovation, the funds that can be invested in the financial market will be less. Therefore, the degree of corporate financialization in the growth period will not be very significant on audit fees. In the decline period, the overall free cash flow of the company is less, so fewer funds will be invested in the financial market that the regression coefficient is not significant.

According to column (4) of Table 5, when the enterprise enters the mature stage, the entity production of the enterprise has entered a relatively rapid development stage. At the same time, it has also completed the previous capital accumulation process. And the external financing constraints have been eased compared to the growth period, so the pressure of internal funds to invest in production has also been reduced. Therefore, mature companies tend to invest more funds in the financial market to obtain high returns instead of pursuing stable development, which will increase the risk of investment failure. Thus, the increase in the degree of financialization of enterprises in the mature period will lead to a significant increase in audit risk, and thus a significant increase in audit fees.

4.5 Robustness Test

4.5.1 Change the Independent Variable

By manipulating the classification of available-for-sale financial assets, management can manipulate earnings and whitewash statements, which increases the auditor's litigation risk and leads to an increase in audit pricing. Therefore, referring to the method of Guo Fei et al. (2018), the degree of financialization is replaced by the complexity of financial assets (TYPE) [4]. This variable is measured by the types of financial assets. The specific types include transactional financial assets, loan issuance, advance amount, derivative financial assets, held-to-maturity investment, available-for-sale financial assets, and investment real estate, that is, TYPE is a discrete variable with a value of 0–6. The regression results are shown in column (1) of Table 6. After changing the independent variable measurement method, the regression coefficient of the independent variable financial asset complexity is 0.018, which positively and significantly affects audit fees at a significance level of 1%, indicating that this result still proves the establishment of hypothesis 1.

4.5.2 IV-GMM Instrumental Variable Method

The empirical part uses industry-fixed effects and time-fixed effects to control unobservable industry factors and time factors to a certain extent. However, there may still be a causal relationship between the degree of corporate financialization and audit fees.

Table 6. Results of Robustness Test

Variables	(1) Change independent variable	(2) IV-GMM
	Lnfee	Infee
Type	0.0188*** (0.0055)	
Fin		0.2692*** (0.1039)
Lnsize	0.3600*** (0.0056)	0.3789*** (0.0085)
Lev	0.0585 (0.0409)	0.0040 (0.0651)
Roa	-0.1350* (0.0702)	-0.3093*** (0.0885)
recinv	0.0154 (0.0365)	0.0336 (0.0590)
liquidity	-0.0064*** (0.0024)	-0.0081* (0.0044)
age	0.0006 (0.0008)	0.0019 (0.0012)
big4	0.5106*** (0.0241)	0.4968*** (0.0349)
Industry	YES	YES
year	YES	YES
_cons	5.8419*** (0.1173)	5.4983*** (0.1802)
N	7294	3228
R ²	0.6361	0.6306

Note: * p < 0.1, ** p < 0.05, *** p < 0.01; robust standard errors in parentheses

To overcome the impact of the endogenous problem on the empirical results, this paper uses the instrumental variable generalized moment estimation (IV-GMM) method to test its robustness. In the selection of instrumental variables, it needs to be related to the degree of corporate financialization and not related to the disturbance items. Therefore, the degree of corporate financialization with a lag of one period and two lags is used as an instrument variable. The IV-GMM estimation results are shown in column (2) of Table 6. The coefficient of the independent variable is 0.2692, which positively affects the audit fee at a significance level of 1%, which still supports the establishment of the hypothesis.

5 Conclusions and Suggestions

This paper explores the impact of corporate financialization on audit fees and concludes that the impact of corporate financialization on audit fees presents a significant positive correlation. Besides, through the analysis of heterogeneity based on different natures of property rights and the life cycles of enterprises, the paper found that as the degree of financialization increases, the audit fees of state-owned enterprises have risen to a greater degree than non-state-owned enterprises; when analyses the heterogeneity of different life cycles, it reveals that the increase in the degree of financialization of enterprises in a mature period will significantly increase audit fees. Finally, after replacing the independent variables and using the IV-GMM instrumental variable method to test, the conclusions are still robust.

Based on the conclusions, this paper draws the following recommendations: for enterprises, the financialization of enterprises should play a more important role in preventing future risks of enterprises and helping enterprises to achieve good sustainable development in the market; for investors, they should pay more attention to the enterprises with excessive investment in the financial market and high degree of financialization, so as to optimize their investment decisions. For auditors, auditors should include the level of corporate financialization as a factor for audit risk and pricing decisions; for the government and regulatory agencies, they should strengthen supervision and strictly control the accuracy and reliability of corporate information disclosure.

References

1. Dickinson V (2011) Cash flow patterns as a proxy for firm life cycle. *Accounting Review* 86(6):1969–1994
2. Du Y, He S, Chen J (2019) How does financialization affect audit pricing? *J Audit Res* 4
3. Francis JR, Michas PN, Seavey S (2013) Does audit market concentration harm the quality of audited earnings? Evidence from audit markets in 42 countries. *Contemp Account Res* 30(1):325–355
4. Guo F et al (2018) Does complexity of financial derivatives affect audit fees?– An empirical study of China’s listed banks. *Account Res* 007:72–78
5. Krippner GR (2005) The financialization of the American economy. *Soc Econ Rev* 2:173–208
6. Sandra P, Walter, S, Hylke V (2008) Financial constraints in China: firm-level evidence. Discussion Papers (ECON - Département des Sciences Economiques)

Open Access This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

