Impact of husband and wife shareholdings on audit fees

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Abstract. This paper examines the impact of family firms' husband and wife shareholding on audit fees using family firms listed in A-share companies from 2002-2021 as a sample. The findings show that family firms' husband-wife shareholding significantly reduces audit fees. Further analysis shows that the effect of family firms' husband-wife shareholding on audit fees is more significant in companies with longer listing years and family firms with smaller losses. The mechanism test reveals that husband-wife shareholding in family firms leads to the misappropriation of funds by major shareholders and protects the truthfulness of the company's financial statements and business activities, which in turn reduces the audit fee. This study provides new ideas and empirical support for the role of husband-wife shareholding in corporate governance of family firms.

Keywords: Hsband and wife shareholding, Audit fees, Misappropriation of funds by major shareholders.

1. Introduction

Husband and wife shareholding, as a unique shareholding structure, has attracted much attention in recent years in both academic and practical circles. Husband and wife shareholding in a family business means that the shares of an enterprise are jointly owned by both husband and wife. This kind of shareholding structure can be favorable to the stability and long-term development of the family business. In the case of husband-and-wife shareholding, they can jointly participate in business decision-making and share the risks and responsibilities of the enterprise. In addition, joint shareholding by husband and wife is also conducive to the transmission of family wealth and the solidity of the business structure, as this shareholding structure usually prompts both spouses to pay more attention to the long-term development of the business and the transmission of the family legacy. Audit fees are regarded as one of the key indicators for assessing the level of corporate governance and the health of internal controls. A sound corporate governance system helps to reduce the risk burden faced by auditors, which in turn has a significant impact on audit risk and audit fees. In particular, audit fees, as one of the key indicators of the quality of corporate governance and the health of internal controls, are important in revealing the potential impact of spousal shareholding on company operations. Despite the potential correlation between spousal shareholding and audit fees, there is still a relative lack of research on the relationship between the two. Therefore, an in-depth study of the impact of husband-and-wife shareholding on audit fees can help to reveal the mechanism of the role of husband-and-wife shareholding in corporate governance.

The marginal contributions of this paper are: first, it enriches the research related to the factors affecting audit fees. Existing studies on audit fees are mainly limited to factors such as firm size, complexity and risk of the audit process. And there is a lack of in-depth research on the impact of husband-wife shareholding in family firms on audit fees. Secondly, distinguishing from the current husband and wife shareholding helps to reveal the potential impact mechanism of husband-and-wife shareholding on corporate governance, and provides new perspectives and evidence for corporate governance theory through an in-depth study of the impact of husband-and-wife shareholding on audit fees. Third, the research in this paper helps regulators and investors to understand the relationship between husband-and-wife shareholding and audit fees, which helps to improve the effectiveness of corporate governance and promote the effective operation of the market.

2. Theoretical analysis and hypothesis formulation

The impact of spousal shareholdings on the misappropriation of funds by major shareholders may contribute to the reduction of audit costs, as analyzed below:

First, joint shareholding by husband and wife may increase the monitoring and checks and balances on the behavior of the majority shareholder. If the majority shareholder has misappropriated funds or misused the company's resources, the husband and wife, as shareholders, may pay more attention to and monitor the company's operation status and expose potential problems in a timely manner. This strengthening of the monitoring mechanism can reduce the misbehavior of the majority shareholder and reduce the risk points that the auditor needs to check, thus reducing the audit fee [1]. Some scholars have shown that joint shareholding by husband and wife may promote the optimization of corporate governance structure and efficiency improvement. By establishing a better internal control mechanism and corporate governance framework, it can effectively reduce the misappropriation behavior of the majority shareholder, reduce the auditor's audit depth of the company's internal control, and reduce the audit fee expenditure.

Secondly, shareholding by husband and wife may enhance the awareness of risk control and reduce the level of risk-taking, prompting the majority shareholder to manage the company's funds more prudently and steadily, and avoiding problems such as misappropriation of funds [2]. With joint shareholding by husband and wife, the majority shareholder may pay more attention to the long-term development and stable operation of the company and reduce the occurrence of misconduct. This helps to reduce the auditor's workload in reviewing and investigating potential risks and reduces audit fees.

In addition, joint shareholding by spouses may induce companies to enhance disclosure and transparency [3] in order to minimize the negative impact of family relationships on company operations. Increasing the level of disclosure helps auditors to obtain the necessary information more quickly and reduces the complexity and time-consuming nature of audit investigations, which in turn reduces audit costs.

Based on the above analysis, the following hypotheses are proposed in this paper:

H1: Joint shareholding by husband and wife can reduce audit costs.

3. Research design

3.1. Sample selection and data sources

This paper selects family firms of A-share listed companies from 2002-2021 as the research sample, after the following data processing operations (1) exclude financial industry companies; (2) exclude ST and *ST companies; (3) exclude companies with missing values; (4) in order to avoid the influence of extreme values, this paper carries out the upper and lower 1% Winsorize shrinkage treatment for the continuous variables; after the completion of the processing, there is a total of 13333 valid observation sample companies. The data of the actual controller and his/her spouse come from the "Description of the relationship between the actual controller and his/her spouse" in the CNRDS family business database, and the other variables come from the CSMAR database.

3.2. Description of variables

(1) Explained Variables

Audit fee (Auditfee): This paper selects the annual audit fee of listed companies and measures it by taking the natural logarithm.

(2) Explanatory variables

Joint Spousal Shareholding (Coshare): Coshare= 1 if both the beneficial owner of the listed family business and his/her spouse hold shares in the company, 0 otherwise.

(3) Control variables

Drawing on the research of Li Xin, He Xiaogang [4] et al, the control variables in this paper are selected as follows: firm size (Size); gearing ratio (Lev); return on net assets (Roe); fixed assets ratio (Fixed); growth (Growth); whether loss (Loss); board size (Board); two positions (Dual); number of shares held by the first largest shareholder/total number of shares (Top1); in addition, year dummy variables (Year) and industry dummy variables (Indu) are added. Number of shares (Top1), in addition, year dummy variable (Year) and industry dummy variable (Indu) are added, and the variable symbols and descriptions are shown in Table 1.

Table 1. List of variable definitions.

Variable	Notation	Description of variables
explanatory variable	Auditfee	Annual audit fees for listed companies and measuring them in natural logarithms
explanatory variable	Coshare	The company, if owned by a husband and wife
control variable	Size	Enterprise size
	Lev	Gearing ratio, with a value equal to total liabilities/total assets
	Roe	Return on net assets, the value of which is equal to net profit/shareholders' equity balance
	Fixed	Fixed asset ratio, fixed assets/total assets
	Growth	(Increase in operating income/total operating income of the previous year) x 100%
	Loss	Is there a loss
	Board	Natural logarithm of the number of board members
	Dual	Whether or not the two posts are combined
	Top1	Shareholding of the largest shareholder as a percentage of total shareholding
	Year	Year dummy variable
	Indu	Industry dummy variables

3.3. Model building

This paper uses multiple regression analysis, which is constructed as follows

$$Auditfee_{it} = \alpha_0 + \alpha_1 Coshare_{it} + \alpha_2 Controls_{it} + \sum Year + \sum Indu + \varepsilon_{i,t} \quad (1)$$

In the model, the$\mathbf{Auditfee_{it}}$ denotes the audit fees of the ith firm in year t;$\mathbf{Coshare_{it}}$ is the exit threat of firm i in year t; Controls denotes the control variables; Year is the year variable, Indu is the industry variable, and the regression coefficient of the regression model for Couple Shareholding (Coshare) $\boldsymbol{\alpha_1}$ in the regression model is significantly negative, then it indicates that Coshare can reduce the audit fee.

4. Empirical analysis

4.1. Descriptive statistics

The descriptive statistics of this paper are shown in Table 2: the mean and standard deviation of audit fee (AuditFee) are 13.59 and 0.587 respectively, and the maximum and minimum values are 16.06 and 12.13 respectively, which can be seen that there is a difference in the auditing fee of listed companies. The mean and standard deviation of Coshare (husband and wife shareholding) are 0.480 and 0.500, respectively, which can be seen that there has been a larger proportion of family businesses with husband-and-wife shareholding [5]. The descriptive statistics of the remaining control variables are basically consistent with the existing literature.

Table 2. Descriptive statistics.

Variable	N	Mean	SD	Min	p50	Max.
AuditFee	13046	13.590	0.587	11.700	13.530	16.060
Co share	13046	0.480	0.500	0	0	1
Size	13046	21.870	1.117	19.320	21.740	26.450
Lev	13046	0.401	0.195	0.027	0.397	0.908
Roe	13046	0.068	0.136	-0.926	0.0760	0.470
Fixed	13046	0.202	0.133	0.002	0.185	0.746
Growth	13046	0.199	0.424	-0.658	0.133	4.024
Loss	13046	0.101	0.301	0	0	1
Board	13046	2.086	0.191	1.099	2.197	2.708
Dual	13046	0.357	0.479	0	0	1
Top1	13046	34.060	13.930	8.087	32.020	75.840

4.2. Benchmark regression analysis

The multiple regression results are shown in Table 3. The regression coefficient of AuditFee and Coshare is -0.0202, which is significant at 5% level, indicating that AuditFee is negatively correlated with Coshare, and Coshare significantly reduces AuditFee, which is in line with the expectation of this paper. Consistent with the expectations of this paper, verifying the hypotheses.

Table 3. Multiple regression results.

	(1)
VARIABLES	AuditFee
Coshare	-0.0202**
	(-2.10)
Size	0.3369***
	(77.20)
Lev	0.1166***
	(5.84)
Roe	-0.0723***
	(-3.00)
Fixed	0.1172***
	(4.36)
Growth	0.0054
	(1.04)
Loss	0.0427***
	(4.39)
Board	0.0006
	(0.03)
Dual	-0.0000
	(-0.00)
Top1	-0.0012***
	(-4.08)
Constant	5.7781***
	(56.27)
Observations	13,046
Year FE	YES
IndustryFE	YES

z-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

4.3. Robustness Tests

4.3.1. Adding control variables

Considering the variables that may be omitted in this paper, on the basis of the previous study, this paper controls for the equity ratio (Der), the percentage of independent directors (Indep), Tobin's Q

value (TobinQ) large shareholders' capital utilization (Occupy), and re-regresses the regression results as shown in column (1) of Table 4: AuditFee and husband and wife's shareholding (Coshare) There is still a significant negative relationship, consistent with the benchmark regression results, indicating that the findings of this paper are robust.

4.3.2. Increasing fixed effects

Since there will be differences in economic level, marketization degree, policy regulations, culture and other factors in different provinces [6], considering that these differences may have some impact on the regression results, the province dummy variable (Province) is added to avoid omitting important macro factors. The specific results are shown in column (2) of Table 4: the regression coefficients of AuditFee and Coshare are still significantly negative at the 5% level, and the conclusions drawn in the previous section remain robust.

4.3.3. Replace dependent variable

Considering that the results of this paper may be affected by extreme events such as the New Crown Epidemic, in order to ensure the reliability of the conclusions, this paper excludes the sample of 2020, during which the New Crown Epidemic occurred during the sample period, and re-tests are conducted. As shown in column (3) of Table 4, the coefficient of husband-and-wife shareholding remains consistent with the previous paper, and the findings of this paper remain robust.

Table 4. Addition of control variable analysis.

	Adding control variables	Increased fixed effects	Replacement samples
	(1)	(2)	(3)
VARIABLES	AuditFee	AuditFee	AuditFee
Coshare	-0.0205**	-0.0218**	-0.0232**
	(-2.13)	(-2.27)	(-2.23)
Constant	5.4890***	5.7788***	5.7446***
	(47.80)	(55.17)	(51.10)
Observations	13,037	13,046	10,273
Year FE	YES	YES	YES
IndustryFE	YES	YES	YES
ProvinceFE	NO	YES	NO

z-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

4.3.4. PSM

In this paper, gearing ratio (Lev), return on net assets (Roe), nature of ownership (SOE), Big 4 auditing (Big4), and equity concentration (Top1) are used as matching variables, and regressed according to 1:3, 1:5nearest-neighbor matching versus after kernel matching, respectively. The matching variables all passed the balance test. As shown in Table 5 of the regression results: the regression coefficients of Coshare are all significantly negative, further validating the robustness of the benchmark regression.

Table 5. PSM.

	1:3nearest neighbor matching	1:5nearest neighbor matching	nuclear matching
VARIABLES	AuditFee	AuditFee	AuditFee
Coshare	-0.0246**	-0.0314**	-0.0241**
	(-2.44)	(-2.04)	(-2.41)
Constant	5.7283***	11.9369***	5.7675***
	(52.87)	(101.95)	(55.02)
Observations	11,751	11751	12,806
Year FE	YES	YES	YES
IndustryFE	YES	YES	YES

z-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

5. Further analysis

5.1. Heterogeneity analysis

The samples are grouped according to the median number of years of company listing, and the samples are divided into two groups: those with a longer number of years of company listing and those with a shorter number of years of company listing. The regression results are presented in columns (1) (2) of Table 6. From the regression results, it can be seen that the regression coefficients of Coshare and AuditFee are still significantly negative at the 5% level for the sample with longer years of listing. The regression coefficients of couple shareholding (Coshare) and audit fees (AuditFee) are not significant in firms with shorter years of listing. This is due to the fact that in China, the standard of the early listed companies is relatively low, as the standard of the listed companies is getting higher and higher, instead, the listed companies with long years of experience have more defects [7]. In the analysis, husband and wife shareholding can effectively inhibit is the audit fee of listed companies with long time limit. For listed companies with short time frame, due to its own low audit fee. Husband and wife shareholding cannot work. Therefore, the effect of husband-and-wife shareholding on the reduction of audit fee is more significant and realistic in the companies with longer time frame of listing.

5.2. Moderating effects

The moderating variable in this paper is whether the firm has a loss (Loss), the regression results are shown in column (3) of Table 6, the cross-multiplier term (Coshare*Loss) has a significant relationship with audit fees (AuditFee) at the 5% level, with a regression coefficient of 0.0316. Couple's shareholding (Coshare) has a significant negative correlation with audit fees (AuditFee) at the 5% level. The regression value is -0.0216, which indicates that the inclusion of moderating variables weakens the negative correlation between husband-and-wife shareholding and audit fee. The reason is that if the enterprise loss is greater, for the loss-making enterprise, the auditor is required to maintain a high degree of professional prudence, and more audit evidence is needed, so the audit fee is high [8] . Therefore, the effect of husband-and-wife shareholding on the reduction of audit fees is diminished.

Table 6. Further analysis.

	(1) Longer listed group	(2) Shorter listing group	(3) Moderating effect
VARIABLES	AuditFee	AuditFee	AuditFee
Coshare	-0.0286**	0.0105	-0.0216**
	(-2.17)	(0.74)	(-2.24)
Constant	5.9830***	6.0624***	5.7815***
	(42.30)	(35.41)	(56.30)
Coshare*Loss	/	/	0.0316**
	/	/	(2.21)
Observations	6,811	6,235	13,046
Year	YES	YES	YES
Indu	YES	YES	YES

z-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

5.3. Mechanism analysis

In order to further clarify the mechanism of the impact of husband-and-wife shareholding on audit fees, reference is made to the research of Yuan Ruiyao [9] et al: When husband and wife shareholding in family business, both husband and wife will pay more attention to their own own entrepreneurial achievements. In order to maintain and develop the enterprise, they tend to have better long-term planning for the enterprise, and pay more attention to an estimate the needs of stakeholders. This will

reduce the damage to the enterprise value and inhibit the "hollowing out behavior" of the major shareholders to the enterprise.

In this paper, we draw on the study of Zhang Xuezhi, Ke Chan [10] to measure the second type of agency cost (Occupy) of firms by the capital appropriation of major shareholders. The results are shown in Table 7: the regression coefficients of Occupy and Coshare are significantly negative at the 1% level. According to the analysis, husband and wife shareholding can effectively inhibit the capital appropriation of the major shareholders and reduce the benefit appropriation of the major shareholders, thus reducing the audit fee.

Table 7. Mechanism analysis.

	Mechanism analysis
VARIABLES	AuditFee
Coshare	-0.0216**
	(-2.24)
Constant	0.0316**
	(2.21)
Observations	13,046
Year	YES
Indu	YES

6. Conclusion

Husband and wife shareholding is a common form in the practice of corporate governance. This paper examines the impact of husband-and-wife shareholding in family firms on audit fees using family firms of A-share listed companies from 2002-2021 as a sample. The findings show that family firms' husband-wife shareholding significantly reduces audit fees. Further analysis shows that the effect of family firms' husband-wife shareholding on audit fees is more significant in companies with longer listing years and family firms with smaller losses. The mechanism test reveals that husband-wife shareholding in family firms can reduce the appropriation of funds by majority shareholders and protect the truthfulness of the company's financial statements and business activities, thus reducing audit fees. The study in this paper provides new ideas and empirical support for the role of husband-wife shareholding in the governance of family firms

The results of this research are instructive in deepening the understanding of the relationship between the governance and auditing domains of family firms, where joint shareholding by husband and wife may reduce the profit-taking behavior of the majority shareholders, which in turn enhances the effectiveness of corporate governance. More consideration needs to be given to the impact of shareholder structure on corporate governance and auditing costs in the design of a firm's shareholding structure. In addition, firms should maximize the synergistic effects of the firm's shareholder structure and external audit in order to jointly promote the sustainable development of the firm.

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