INTERNATIONAL JOURNAL OF ECONOMICS AND FINANCE STUDIES
Vol: 15 **No:** 02 **Year:** 2023 **ISSN:** 1309-8055 (Online) (**pp.** 398-416) **Doi:** 10.34109/ijefs.202315219
Received: 20.10.2022 | **Accepted:** 15.03.2023 | **Published Online:** 28.04.2023

-RESEARCH ARTICLE-

AUDIT COMMITTEE CHAIR OVERLAP, AUDIT COMMITTEE INDEPENDENCE, AND AUDIT FEES: EVIDENCE FROM CHINA LISTED FINANCIAL INSTITUTIONS

Zhang Chi*

School of Business and Economics, Universiti Putra Malayia, 43400 UPM Serdang, Selangor Darul Ehsan, Malaysia
Email: jmzhangchi@gmail.com
ORCID: https://orcid.org/0000-0002-9521-0304

Sabarina Mohammed Shah

School of Business and Economics, Universiti Putra Malayia, 43400 UPM Serdang, Selangor Darul Ehsan, Malaysia
Email: sabarina@upm.edu.my
ORCID: https://orcid.org/0000-0001-7663-2918

Lau Yeng Wai

School of Business and Economics, Universiti Putra Malayia, 43400 UPM Serdang, Selangor Darul Ehsan, Malaysia
Email: wai_ly@upm.edu.my
ORCID: https://orcid.org/0000-0003-3801-7919

Siti Manisah Ngalim

School of Business and Economics, Universiti Putra Malayia, 43400 UPM Serdang, Selangor Darul Ehsan, Malaysia
Email: siti@upm.edu.my
ORCID: https://orcid.org/0000-0002-4032-4689

***Corresponding Author** Email: jmzhangchi@gmail.com

Citation (APA): Chi, Z., Wai, L. Y., Ngalim, S. M., Shah, S. M. (2023). Audit committee chair overlap, audit committee independence, and audit fees: Evidence from China listed financial institutions. *International Journal of Economics and Finance Studies*, *15*(02), 398-416. doi:10.34109/ijefs.202315219

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—Abstract—

Purpose: This study examined the overlap between the audit committee (AC) chair and the AC independence effect on audit fees in China's listed financial institutions. This study examines whether AC chair overlap and AC independence can enhance or weaken monitoring effectiveness if the external auditor perceives higher inherent risk and whether independent directors on AC pursue high-quality audit service. Design/methodology/approach: This research employs a regression model to estimate the relationship proposed in the hypotheses. The data comprises 126 public financial institutions in China's Shenzhen Stock Exchange and the Shanghai Stock Exchange. An overall population sample of 120 financial institutions in 2021 will be tested, with data collected by hand from yearly reports and the CSMAR database (excluding 11 *, *st financial institutions). Findings: Our findings reveal that AC chair overlap is linked to inadequate governance and increased inherent risk, which is positive with audit fees. Furthermore, the results show a positive and statistically significant correlation between AC independence and audit fees when firm size is controlled for. Among these control variables, board size, LEV, firm size, and firm loss strongly impact pricing audit services. AC independence is not more essential than firm size when pricing audit fees. Originality/value: In our investigation, we broaden the existing literature on AC chair overlap, AC independence, and pricing audit services, focusing on the extent of the limited literature on AC leadership and filling a void in the research on audit fees in the financial sector. Our study provides evidence of the AC attributes in Chinese two-tier board corporate governance mechanisms.

Keywords: Audit committee chair overlap, Audit committee independence, Audit fee, Corporate governance mechanism, Inherent risk, Independent director.

Paper type: Research paper

1. INTRODUCTION

The audit committee (AC) is the function that present the board to monitor the organisations' financial activities, maintaining internal audit departments' independence, ensuring internal control effectiveness, and corporate governance performance (Alkebsee et al., 2021; Rani, 2018). The characteristic of AC, such as the members' financial expertise and professional skills, are ensured its effectiveness, which can also impact the corporate governance's efficiency (Abbott et al., 2003; Collier & Zaman, 2005; Thiruvadi, 2012). On September 30 in 2018, the China Securities Regulatory Commission (CSRC) released the Code of Corporate Governance for Listed Companies requiring the audit committee chair must be an independent director with accounting expertise. Li and Li (2020) emphasise that the

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Code maintaining the audit committee is a vital function and is essential for monitoring internal audit and internal control to decrease the issues of governance. Previous literature focuses on the audit firms' perspective to price the audit fee, however, some researchers investigate the auditee's mechanisms of governance have an impact on the pricing of audit fees (Bliss, Muniandy, & Majid, 2007; Craswell, Francis, & Taylor, 1995; Simunic, 1980). The research results show different views, some studies recognised that the auditees' stronger governance mechanism needs higher quality services that will lead the higher audit fees (Abbott et al., 2003; Carcello et al., 2002); on the other hand, some studies identified that the auditees' effective internal control would reduce external auditors to perceived the audit risk which will lead lower audit fees (Tsui, Jaggi, & Gul, 2001; Yatim, Kent, & Clarkson, 2006).

Since 2002, according to the CSRC, publicly traded enterprises have been obligated to establish an AC under the board, which the functions and responsibilities of AC imitated from the Anglo-Saxon model (Komal, Ye, & Salem, 2022; Wu, Patel, & Perera, 2015). Chambers (2005) stated that the AC's responsibilities in China are similar of the United Kingdom (the UK), such as practices, rules and enforcement. While China's governance code requires an AC chair and most members must be independent directors, the UK's governance code claims all AC members must be independent directors. However, the institutional environment and two-tier board structure of China's listed companies differ from the UK, which sparked debate about AC's effectiveness (Chen, 2005; Komal, Ye, & Salem, 2022; Miles, 2006). Effective AC often depends on the expertise and experience of the AC chair, who are responsible for offering leadership vision to decision AC agenda (Wan-Hussin, Fitri, & Salim, 2021). Some studies stated that each member of the board committee staying at other board committees at the same time would reduce their focus on their supervisory role (Wan-Hussin, Fitri, & Salim, 2021; Zain & Subramaniam, 2007), while, Gal-Or, Hoitash, and Hoitash (2018) recognised that it is helpful to receive more excellent support from shareholders when audit committee chair sits on other board committees.

Previous research has examined the characteristics of an audit committee, including financial expertise, diversity of genders, and audit fees. This study aims to examine the relationship between AC chair overlap, AC independence and audit fees and also detective the differences between state control financial institutions and non-state financial institutions. Firms with ineffective AC are a greater likelihood of association with inadequate monitoring control systems, which may affect external auditors who perceive inherent audit risk and need to expand their work scope. Therefore, our study aims to determine if auditor perception of inherent audit risk is impacted by AC chair overlap, leading to increased audit fees. And also, the AC independence have a relationship with audit fees. However, the findings of the current research suggest that

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the AC chair overlap is related to higher audit fees in China's listed financial institutions. The additional test shows that the firm size control variable has tremendous significance with audit fees; the larger the financial institutions, more expensive the audit fees. When we control this variable, the AC independence shows a meaningful positive relationship with audit fees. The results show that although AC independence exhibits a positive and significant correlation with audit fees, external auditors pay more attention to firm size when pricing audit fees.

The remaining sections of this study are structured as follows: section 2 literature review, section 3 methods, section 4 results, section 5 discussion and conclusion.

2. LITERATURE REVIEW

2.1 Audit fee studies

Simunic (1980) established a model to price the audit services, and many studies used his model to investigate factors with audit fees' relationship in competitive environment market and found that the audit scope and audit risk are determinants (Ahmed & Goyal, 2005; Alkebsee et al., 2021; Bliss, Muniandy, & Majid, 2007; Che-Ahmad & Houghton, 1996). Internal control significantly affects the pricing of audit services because control deficiencies can cause external auditors to perceive risks and thus expand the audit scope (Anderson, Francis, & Stokes, 1993; Craswell, Francis, & Taylor, 1995; Wallace, 1989). Similarly, the reliability of the accounting functions of a system is closely tied to its internal control; if the internal control is ineffective, its reliability will also decrease. As a result, auditors need to conduct more substantive tests, which increases the workload of auditors and increases audit fees accordingly (Widmann, Follert, & Wolz, 2021).

The existing literature shows characteristic of AC (e.g., size, gender, expertise) have relationship with audit fees (Lai et al., 2017; Loukil, 2014; Rani, 2018). The performance of AC will also be considered as one of the criteria for governance effectiveness when external auditors participate in auditing (Liu, Lobo, & Yu, 2021). And the AC is sensitive to risk so that the auditor reduces the audit risk by evaluating the monitoring role of the AC's effectiveness (Alkebsee et al., 2021; Krishnan & Visvanathan, 2007). An influential AC ensure its monitoring is effective and enhances the internal control that lightens the work for the external auditors and reduces the audit fees (Hay, Knechel, & Wong, 2006). Alternatively, a more effective AC also hope to enhance their financial activites to demand a high quality audit services to avoid negative influence to their organisations (Carcello, Hermanson, & Ye, 2011; Naiker & Sharma, 2009; Naiker, Sharma, & Sharma, 2013). Therefore, we attempt to examine the relationship beteen AC chair overlap, AC independence and audit fees..

2.2 Hypotheses development

2.2.1 Relation between AC chair overlap and audit fee

Usually, the board assigns its duties to different committees to present them to perform various duties and activities (Spira & Bender, 2004). The Code of Corporate Governance for Listed Companies in China recommends that the audit committee, remuneration committee, and nomination committee consist primarily of independent directors (CSRC, 2018). Because of this requirement, there are not enough independent directors in the corporation; as a result, the majority of independent directors serve on numerous committees, which increases the amount of overlap between those committees (Chandar, Chang, & Zheng, 2012; Chang, Luo, & Sun, 2011; Kusnadi et al., 2016; Wan-Hussin, Fitri, & Salim, 2021). Tanyi and Smith (2015) argued that AC monitoring will be weaken when their members are busy. Liao and Hsu (2013) research support their opinion and finds that the overlapping memberships company have a poor earning quality. When the AC chair serve on other committees, their work workload and time commitment may be strained.

As found by Bedard, Hoitash, and Hoitash (2008), the auditing firm will charge higher fees when an auditee's internal controls are weak. On the other hand, as found by Chandar, Chang, and Zheng (2012), firms with overlapping committee members have lower discretionary accruals, and thus higher financial quality will result in lower audit fees. The overlapping AC chair were also seen as more knowlegeable, which increased informal communications and interaction. For example, Turley and Zaman (2007) investigated a UK financial institutions, their findings show that professional AC chair is more attractive communicated by CAEs. The fact that the head of the AC sits on at least one board committee gives the impression that they are more vital governance practitioners. Therefore, we propose a hypothesis with no direction as follows:

H1. *The audit committee chair overlap is related to the audit fee.*

2.2.2 Relation between audit committee independence and audit fee

Independence is an essential AC characteristic that can improve AC functions and responsibilities (Larasati et al., 2019). Independent directors perform a better monitoring role since they do not have any conflicts with senior management. The AC independence is supposed to provide fair assessment and judgment and the ability to oversee management properly. As independent directors, AC independence enhances the board's reputation as an expert in decision control (Fama & Jensen, 1983). Suppose the occurrence of financial misstatement will increase the independent director's reputation capital (Abbott et al., 2003). Hence, AC is willing to expand its audit scope to avoid financial misstatements and protect its reputation

related to higher audit fees. Abbott et al. (2003); Kikhia (2014); Larasati et al. (2019) all hypothesise that the independence of the audit committee is positively correlated with audit fees, and all their findings approve that.

However, from another aspect, Bliss, Muniandy, and Majid (2007) recognised effective AC is responsible for supervising financial activities and internal control. The effective internal control and governance will make the audit firms perceive lower audit risk, so the substantive review should be reduced first, and it is easier to obtain lower audit fees. Therefore, we propose a hypothesis with no direction as follows:

H2. *The audit committee independence is related to the audit fee.*

3. METHODS

3.1 Sample selection

This study focuses on the AC chair overlap, AC independence and audit fees of listed financial institutions in China. In general, prior studies exclude financial institutions from the research sample because the regulatory requirements of the financial industry are quite different from those of other sectors (Tsui, Jaggi, & Gul, 2001). In the examination of the financial industry, the division of audit fees is still lacking. Consequently, our research focuses on 126 Chinese financial institutions listed on the Shenzhen and Shanghai stock exchanges. This results in a sample consisting of 120 financial institutions in 2021, with data obtained manually from annual reports and the CSMAR database (excluding the 11 *, *st financial institutions).

3.2 Research variables

3.2.1 Dependent variable

This study applied Simunic (1980); Craswell, Francis, and Taylor (1995) models according to China's modification conditions. The dependent variable, the Audit fee, is measured by the natural log of audit fees paid for the audit firm in the year. The organisation makes this disclosure in the section titled "Notes to and forming part of the financial statements" of the annual reports. And CSMAR database has this data set to be downloaded. The unbalanced nature of audit fees is managed using the natural log.

3.2.2 Independent variables

The AC chair overlap (ACOVLAP) and the number of independent directors on the AC (INDAC) are independent variables. We predict a correlation between AC chair overlap and audit fees, as well as a relationship between independent directors on the AC and audit fees, as auditors invest more effort into analyzing the risk of the firm and

whether or not an influential audit committee exists. In addition, we anticipate a link between AC chair overlap and audit fees.

3.2.3 Control variables

The control variables included in the regression model are NUMCOM, ACSIZE, BSIZE, SIZE, LEV, ROA, DUAL, LOSS, BIG4, and CHANGE, which from previous literature on audit fees (Craswell, Francis, & Taylor, 1995; Francis, 1984; Gul, 1999; Gul & Tsui, 1997; Simunic, 1980; Tsui, Jaggi, & Gul, 2001). The control variable of BIG8 present China domestic top eight audit firms.

NUMCOM is measured as the number of board committees. ACSIZE is measured as the number of audit committee members. BSIZE is measured as the number of board members. SIZE is measured as the natural log of total assets. LEV evaluate the firm's solvency, and is measured as total debt divided by total assets. ROA, measured by profit after tax divided by total assets, is used to control for overall audit risk. The DUAL variable is measured as a dummy variable, assigned 1 if the chief executive officer (or managing director) additionally occupies the position of the chairman of the board, 0 if otherwise. The LOSS variable is measured as a dummy variable of 1 if a loss was recorded during the year, 0 otherwise. Prior research on audit committee effectiveness and audit risks found that Big 4 international audit firms attract higher audit fees than non-Big 4, and the Big 8 domestic Chinese audit firms attract higher prices than non-Big 8. The control variable BIG4 is a dummy variables, 1 if the sample firm is audited by a Big 4 audit firm, 0 otherwise. BIG8 is a dummy variables, 1 if the sample firm is audited by a Big 8 audit firm, 0 otherwise. The CHANGE variable is measured as a dummy variable of 1 if the auditee changed its audit firm last year.

3.3 Regression model

The following is the specification for the OLS regression model:

$$LAF = \beta_0 + \beta_1 ACOVLAP + \beta_2 INDAC + \beta_3 NUMCOM + \beta_4 ACSIZE + \beta_5 BSIZE + \beta_6 SIZE + \beta_7 LEV + \beta_8 ROA + \beta_9 DUAL + \beta_{10} LOSS + \beta_{11} BIG4 + \beta_{12} BIG8 + \beta_{13} CHANGE + \varepsilon$$

In the regression model, Audit Fee (LAF) is the dependent variable. The definitions of the experimental and control variables follow.

LAF - natural log of audit fees;
ACOVLAP - number of audit committee chair sits on other board committee, 0 if audit committee chair sits on audit committee only;
INDAC - number of independent directors on audit committee;
NUMCOM - number of committees under the board;
ACSIZE - number of audit committee members;
BSIZE - number of board members;
SIZE - natural log of total assets;

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LEV - total liabilities divided by total assets;
ROA - EBIT divided by total assets;
DUAL - dummy variable, 1 if chief executive officer is also chairman of the board, 0 otherwise;
LOSS - dummy variable, 1 if loss during year, 0 otherwise;
BIG4 - dummy variable, 1 if the firm audited by a Big 4 international audit firm, 0 otherwise;
BIG8 - dummy variable, 1 if the firm audited by a Big 8 China domestic audit firm, 0 otherwise;
CHANGE - dummy variable, 1 if the audit firm changed last year, 0 otherwise.

4. RESULTS

4.1 Descriptive statistics

The descriptive statistics for both the dependent and independent variables are provided in Table 1.

Table 1: Descriptive Analysis Results

Variables	N	Minimum	Medium	Maximum	Mean	Std. Deviation
IAF	120	408000	2380000	176000000	10639833.07	30463765.63
ACOVLAP	120	0	1	4	1.55	1.044
INDAC	120	1	3	5	2.71	0.844
NUMCOM	120	3	5	8	5.01	1.226
ACSIZE	120	2	3	9	4.08	1.319
BSIZE	120	5	11	19	11.31	3.122
SIZE	120	955.6262141	203229.8139	35171383	2163107.438	5827465.097
LEV	120	0.034042154	0.811499149	0.936800363	0.771847381	0.182967108
ROA	120	-0.118713932	0.013161115	0.224815435	0.016069319	0.027124139
DUAL	120	0	0	1	0.09	0.29
LOSS	120	0	0	1	0.03	0.18
BIG4	120	0	1	1	0.54	0.5
BIG8	120	0	0	1	0.33	0.47
CHANGE	120	0	0	1	0.21	0.408

Notes: LAF - audit fees in CNY 0; ACOVLAP - number of audit committee chair sits on other board committee; INDAC - number of independent directors on audit committee; NUMCOM - number of committees under the board; ACSIZE - number of audit committee members; BSIZE - number of board members; SIZE - total assets in CNY 000,000; LEV - total liabilities divided by total assets; ROA - EBIT divided by total assets; DUAL - dummy variable, 1 if chief executive officer is also chairman of the board, 0 otherwise; LOSS - dummy variable, 1 if loss during year, 0 otherwise; BIG4 - dummy variable, 1 if the firm audited by a Big 4 international audit firm, 0 otherwise; BIG8 - dummy variable, 1 if the firm audited by a Big 8 China domestic audit firm, 0 otherwise; CHANGE - dummy variable, 1 if the audit firm changed last year, 0 otherwise

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The audit fees can range anywhere from CNY 408,000 to 176,000,000, with a median of CNY 10,639,833.07. The chair of the audit committee serves on 1.55 other board committees, with the total number of other board committees not exceeding 4. The average number of independent directors serving on the audit committee is 2.7. The average number of members on an audit committee is 4, with a maximum of 9 and a minimum of 2. The average number of board members is 11.31, the largest being 19 and the most petite 5. The example companies have total assets that vary anywhere from CNY 955,626,214.10 to CNY 35,171,383,000,000. This represents a wide variety of firm sizes. The sample firms have a mean size of CNY 2,163,107,438,000. There is a dual CEO situation in 9 percent of all of the sample companies. The percentage of businesses that reported a loss for the year was 3 percent, and it was a loss. Audits of 54% of the sample companies were carried out by Big 4 international audit firms, while 33% were carried out by Big 8 China domestic top 8 audit firms. In the past year, there was a 21 percent turnover at the audit business.

4.2 Bivariate and multivariate analysis

Table 2 presents the findings obtained by utilizing the Pearson correlation matrix. Audit fee is significantly negatively correlated with ROA, DUAL, LOSS, and BIG8, and significantly positively correlated with ACOVLAP, INDAC, NUMCOM, ACSIZE, BSIZE, SIZE, LEV, BIG4, and CHANGE. Among the independent variables, the correlation between IAF and firm size (SIZE) is the strongest at 0.781%. Consequently, there is no indication of a multicollinearity issue. The audit committee chair overlap variable (ACOVLAP) has significant positive correlations at the 1% level with the dependent variable, audit fee, indicating that an audit committee chair who also sits on other board committees performs the monitoring role less effectively due to over-commitment, which negatively impacts a higher inherent risk.

Table 3 presents the results of the regression analysis performed on the H1 and H2 hypotheses. We test the hypothesis of all samples with 120 of China's listed financial institutions. The F value of 24.17 that the regression analysis produces is highly significant ($p < 0.01$). The modified R^2 of 71.7 percent offers confidence in the model's explanatory capacity. The coefficient for AC chair overlap (ACOVLP) is positive and significant (p, 0.02). This result supports our hypothesis that AC chair overlap and audit fees are related. In addition, the result implies that a higher degree of overlap between the responsibilities of AC chair and the other board committees leads to a decline in the quality of monitoring governance and internal controls, indicating over-commitment on the part of the AC chair. The coefficient for AC independence (INDAC) is higher than 0.05 and does not show significant. Furthermore, the beta value for board size, firm size, and firm loss is positive and statistically significant, indicating that larger board size, total assets, and healthy loss are correlated with a higher audit fee. However, the beta value for total debt to total assets is negative and significant, indicating that highly leveraged financial institutions have lower audit fees.

Table 2: Pearson Correlation Analysis Results

	IAF	ACOVLAP	INDAC	NUMCOM	ACSIZE	BSIZE	SIZE	LEV	ROA	DUAL	LOSS	BIG4	BIG8	CHANGE
IAF	1													
ACOVLAP	.290**	1												
INDAC	.574**	.336**	1											
NUMCOM	.384**	.436**	.319**	1										
ACSIZE	.499**	.284**	.792**	.249**	1									
BSIZE	.502**	-0.127	.404**	.357**	.502**	1								
SIZE	.781**	0.159	.542**	.493**	.484**	.569**	1							
LEV	.425**	0.023	.235**	.423**	.316**	.482**	.749**	1						
ROA	-0.152	-0.069	-0.008	-0.099	-0.167	-0.15	-.239**	-.461**	1					
DUAL	-0.086	-0.057	-0.062	-0.12	-.196*	-0.097	-0.139	-.201*	.198*	1				
LOSS	-0.091	0.036	-.267**	-.229*	-0.082	-.198*	-.244**	-0.015	-.444**	-0.059	1			
BIG4	.601**	.197*	.536**	.431**	.491**	.495**	.672**	.560**	-0.135	-0.114	-.202*	1		
BIG8	-.417**	-.213*	-.352**	-.296**	-.369**	-.412**	-.432**	-.436**	.296**	0.088	-0.03	-.754**	1	
CHANGE	0.145	.202*	.202*	0.097	0.108	0.015	0.137	0.066	-0.09	-0.021	0.019	0.101	-0.049	1

Notes: *Correlation is significant at the 0.05 level (two-tailed); **correlation is significant at the 0.01 level (two-tailed)

Meanwhile, we control the variable of state control financial institutions and non-state control financial institutions. Only 17 of the state own control listed financial institutions, so the sample is not enough to run of results. Thus, we tested the non-state control listed financial institutions with the same variables. The regression analysis yields a highly significant F value of 20.858 ($p < 0.01$). The adjusted R2 of 71.7 percent gives confidence in the model's explanatory power. The VIF of the BIG4 variable shows that there is multicollinearity with the BIG4 variable that we adjust our control variable. The impact of explanatory factors and control variables (except the BIG4 control variable) on the stock prices of non-state-controlled listed financial institutions using ordinary least squares (OLS) regression. The F value from the regression analysis is 20,858, which is highly significant ($p < 0.01$). The adjusted R^2 of 71.7% provides confidence in the model's explanatory power. The coefficient for AC chair overlap (ACOVLP) and AC independence (INDAC) higher than 0.05 does not show significance. However, the beta values for board size and firm size are substantial and positive, whereas the beta value for total debt to total assets is significant and negative. These results indicate that for non-state-controlled financial institutions, the overlap of the head of the audit committee (ACOVLP) and the independence of the audit committee (INDAC) have no correlation with audit fees. It has two possibilities for external auditors to ignore the effects on audit fees, that corporate governance of the non-state control financial institutions play a good performance, or the board committees lose their effectiveness. Therefore, we need a further test.

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Table 3: OLS regression on audit fee

Model	N=120			N=113 (NON-STATE)			N=113 (NON-STATE) Without BIG4		
	Standardized Coefficients	Sig.		Standardized Coefficients	Sig.		Standardized Coefficients	Sig.	
	Beta		VIF	Beta		VIF	Beta		VIF
(Constant)		0.17			0.354			0.381	
Independent Variables									
ACOVLAP	0.16	0.02	1.922	0.139	0.07	2.052	0.135	0.073	1.998
INDAC	0.09	0.357	3.966	0.074	0.464	3.671	0.077	0.44	3.634
Control Variables									
NUMCOM	-0.06	0.379	1.963	-0.036	0.622	1.93	-0.034	0.643	1.908
ACSIZE	-0.06	0.519	3.674	0.006	0.955	3.694	0.009	0.926	3.65
BSIZE	0.181	0.015	2.284	0.18	0.028	2.35	0.179	0.028	2.348
SIZE	0.926	<.001	4.125	0.945	<.001	4.06	0.954	<.001	3.782
LEV	-0.405	<.001	3.458	-0.4	<.001	3.401	-0.395	<.001	3.332
ROA	0.006	0.926	1.865	0.031	0.668	1.909	0.038	0.589	1.766
DUAL	0	0.993	1.11	-0.038	0.513	1.18	-0.04	0.48	1.159
LOSS	0.199	0.002	1.63	0.202	0.004	1.683	0.2	0.004	1.661
BIG4	0.155	0.123	4.166	0.038	0.749	5.008	-	-	-
BIG8	0.027	0.749	2.902	-0.036	0.715	3.445	-0.06	0.353	1.483
CHANGE	-0.014	0.786	1.098	0.007	0.908	1.146	0.008	0.887	1.139
F	24.17			20.858			0.753		
P	<.001			<.001			0.72		
R^2	0.748			0.753			22.815		
Adjust R^2	0.717			0.717			<.001		
Dependent Variable: IAF									

Notes: LAF - audit fees in CNY 0; ACOVLAP - number of audit committee chair sits on other board committee; INDAC - number of independent directors on audit committee; NUMCOM - number of committees under the board; ACSIZE - number of audit committee members; BSIZE - number of board members; SIZE - total assets in CNY 000,000; LEV - total liabilities divided by total assets; ROA - EBIT divided by total assets; DUAL - dummy variable, 1 if chief executive officer is also chairman of the board, 0 otherwise; LOSS - dummy variable, 1 if loss during year, 0 otherwise; BIG4 - dummy variable, 1 if the firm audited by a Big 4 international audit firm, 0 otherwise; BIG8 - dummy variable, 1 if the firm audited by a Big 8 China domestic audit firm, 0 otherwise; CHANGE - dummy variable, 1 if the audit firm changed last year, 0 otherwise.

Since the firm size is a crucial control variable and shows a strong positive correlation with audit fees. Hence, we decide to run regressions on the same sample and a set of variables without a firm size control variable.

4.3 Additional test

Table 4 contains the additional findings of the regression analysis controlling for the firm size control variable that were obtained from testing hypotheses H1 and H2. The regression analysis yields an F value of 10.464 and is highly significant ($p < 0.01$).

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The adjusted R^2 of 48.8 percent gives confidence in the explanatory power of the model. The coefficient for AC chair overlap (ACOVLP) is positive and significant (p, 0.015). This result supports our hypothesis there is a relationship between AC chair overlap and audit fees. Also, the coefficient for independent directors on the audit committees (INDAC) is positive and significant (p, 0.004). This result supports our hypothesis there is a relationship between AC independence and audit fees. Further, the beta value for board size and using an audit Big 4 audit firm are positive and significant with audit fees. This indicating that larger board size of financial institutions and hiring a Big 4 audit firm tend to have a higher audit fee.

Table 4: OLS regression on audit fee (Control SIZE variable)

Model	N=120			N=113 (NON-STATE)		
	Standardized Coefficients	Sig.		Standardized Coefficients	Sig.	
	Beta		VIF	Beta		VIF
(Constant)		<.001			<.001	
Independent Variables						
ACOVLAP	0.223	0.015	1.902	0.213	0.04	2.026
INDAC	0.362	0.004	3.609	0.341	0.011	3.347
Control Variables						
NUMCOM	-0.038	0.677	1.96	-0.032	0.748	1.929
ACSIZE	-0.158	0.208	3.628	-0.102	0.459	3.641
BSIZE	0.331	<.001	2.176	0.325	0.003	2.255
LEV	0.09	0.367	2.28	0.113	0.295	2.209
ROA	-0.017	0.851	1.863	-0.007	0.947	1.903
DUAL	0.004	0.958	1.11	-0.002	0.976	1.175
LOSS	0.12	0.152	1.6	0.119	0.203	1.651
BIG4	0.392	0.003	3.896	0.313	0.048	4.665
BIG8	0.168	0.129	2.806	0.109	0.412	3.35
CHANGE	0.001	0.988	1.097	0.017	0.828	1.146
R^2	0.54			0.533		
Adjust R^2	0.488			0.47		
F	10.464			8.551		
P	<.001			<.001		
Dependent Variable: IAF						

Notes: LAF - audit fees in CNY 0; ACOVLAP - number of audit committee chair sits on other board committee; INDAC - number of independent directors on audit committee; NUMCOM - number of committees under the board; ACSIZE - number of audit committee members; BSIZE - number of board members; SIZE - total assets in CNY 000,000; LEV - total liabilities divided by total assets; ROA - EBIT divided by total assets; DUAL - dummy variable, 1 if chief executive officer is also chairman of the board, 0 otherwise; LOSS - dummy variable, 1 if loss during year, 0 otherwise; BIG4 - dummy variable, 1 if the firm audited by a Big 4 international audit firm, 0 otherwise; BIG8 - dummy variable, 1 if the firm audited by a Big 8 China domestic audit firm, 0 otherwise; CHANGE - dummy variable, 1 if the audit firm changed last year, 0 otherwise.

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We conduct the same test with the non-state control financial institutions sample. The regression analysis yields an F value of 8.551 and is highly significant ($p < 0.01$). The adjusted R^2 of 47 percent gives confidence in the model's explanatory power. The coefficient for AC chair overlap (ACOVLP) is positive and significant (p, 0.04). This result supports our hypothesis there is a relationship between AC chair overlap and audit fees. And also, the coefficient for independent directors on the audit committee (INDAC) is positive and significant (p, 0.011). This result supports our hypothesis there is a relationship between AC independence and audit fees. Further, the beta value for board size and using an audit Big four audit firm are significant with audit fee, indicating that larger board size of financial institutions and hiring Big 4 audit firm tend to have a higher audit fee—the same results of the whole sample testing.

The additional test shows that the firm size control variable has tremendous significance with audit fees; the larger size of the financial institutions, the higher the audit fees. When we control this variable, the AC independence shows a meaningful positive relationship with audit fees. The results show that although AC independence exhibits a positive and significant correlation with audit fees, external auditors pay more attention to firm size when pricing audit fees.

5. DISCUSSION AND CONCLUSION

This study investigated the relationship between AC chair overlap, AC independence and audit fees in China's listed financial institutions. And it aims to examine whether AC chair overlap and AC independence can enhance or weaken monitoring effectiveness if the external auditor perceives higher inherent risk. Additionally, the independent directors on the audit committee will pursue a higher audit quality to improve the audit fees.

The relationships between variables were examined using logistic and OLS regressions. In 2021, the sample consists of the 120 financial institutions registered on the China Shanghai and Shenzhen stock exchanges. The findings of this study provide additional evidence of the positive relationship between overlapping AC chair positions and audit fees. The results support the notion that auditors perceive a firm to have a higher level of inherent risk when AC chair also serves on other board committees. The testing results proved Liao and Hsu's (2013) and Tanyi and Smith's (2015) research. AC chair overlap will weaken their monitoring role because of the commitment to their time to deal with other committees' responsibilities. This will make the external auditors perceive the inherent risks, thereby expanding the scope of the audit and increasing the audit fee.

Meanwhile, the regression model testing shows that AC independence does not correlate with audit fees. Hence, we control the state variable, the 103 non-state control listed

financial institutions do not offer the same trend with the results. The AC chair overlap and AC independence have no significant relationship with audit fees. This result indicates that the AC is likely not associated with lower audit fees. And also may emphasise that the AC does not play any important to the external audit to judge its inherent risk to price the audit fees. Therefore, we conduct an additional test.

Since the firm size is a crucial control variable, and shows a strong positive correlation with audit fees. If AC independence weakens audit fees, the robust control variable will affect us to observe. Hence, we run regressions on the same sample and a set of variables without a firm size control variable. The coefficient for AC chair overlap and AC independence are positive and significant with audit fees. Similarly, we control the state variable again; the 103 non-state control listed financial institutions show the same trend with the results. This indicates that the AC independence is related to higher audit fees in China's listed financial institutions when ignoring the firm size affects whether the state controls China's listed financial institutions.

The additional test shows that the firm size control variable has tremendous significance with audit fees; the larger size of the financial institutions, the higher the audit fees. When we control this variable, the AC independence shows a meaningful positive relationship with audit fees. The results show that although AC independence exhibits a positive and significant correlation with audit fees, external auditors pay more attention to firm size when pricing audit fees. Among these control variables, the board size, firm size, LEV, and firm loss also strongly impact pricing audit services.

Our findings imply that investors can take solace in the fact that internal controls over financial reporting, risk management, and governance practices appear to be more developed when the chair of the audit committee is not overburdened with memberships on other board committees. Although this study enhances our comprehension of the impact of audit committee chair overlap, there is still much to learn about its advantages and disadvantages, which we encourage future research to investigate. Meanwhile, the independent directors of AC do not appear to require high-quality audit services to assure the financial statements. Whether this indicates that the independent directors' governance performance is ineffective requires additional research.

This study has uncovered two major drawbacks. First, the sample only includes data from one year and comprises 120 financial institutions listed on China's Shanghai and Shenzhen stock exchanges. The findings may not apply to other periods and countries. Second, only AC chair overlay and AC independence were evaluated in the corporate governance mechanisms. Numerous additional variables could be investigated. Future research should investigate the relationship between managerial ownership and audit fee pricing, the efficacy of independent directors in the governance system, and whether the overlap of the AC chair affects its independence.

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