

## Audit Firm Size and Expertise, and Audit Fees: Examination and Analysis in Consumer Cooperative Companies

### Abstract

This study aimed to examine the effect of size and expertise of the auditor on auditing fees in Consumer Cooperatives Companies. The present research is an applied study that employs descriptive-analytical methods for its purposes. Library archives and documents, particularly those of Rahavard Novin Software and the financial statements of the firms accepted in the Tehran Cooperatives Organization (extracted from the rdis.ir website). The statistical population of the research consists of 70 cooperative companies. The study sample was selected from the statistical population using systematic random sampling. To estimate and evaluate the research models, the F-Limer test was applied to the data on 70 firms for the years 2009 to 2019, i.e., 11 years, amassing 770 firm-year observations. Hypotheses were analyzed and tested by EVIEWS 10 using the estimated generalized least squares (EGLS) regression model. For analysis, panel data approaches at significant levels of 5% were used. The results showed that the variables of audit firm size and auditor expertise had a significant effect on audit fees and, as such, the research hypotheses were established at a 95% confidence interval. Moreover, the coefficient corresponding to the variables of audit firm size and auditor expertise is positive, indicating that the more the size of the audit firm and the higher the perceived auditor's expertise, the more the audit fee.

**Keywords:** *Audit, Audit Fee, Audit Firm Size, Auditor Expertise*

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### Introduction

The audit fees are typically determined in contracts between the auditors and the clients, mostly devised prior to the commencement of the audit work. However, "cost-reimbursement" clauses are usually included in the contract, allowing the auditor to receive incentive-based wages based on extra tasks performed in unexpected scenarios, including the complications of prolonged tenure or factors influencing the audit risk. Fixed-fee audit contracts are not limited to contingencies that reduce audit fees in cooperative companies. That is, contractual agreements and other articles lead to an increase in auditing fees. Competitive markets bring pricing closer to reality and force sellers to lower prices over time. Auditors generally argue that in case the tenure required for auditing is overestimated, even though the audit fees would be higher in the current period, they will be eventually adjusted for in the upcoming periods.

The audit fee is determined based on the cost of the services provided in the audit process in addition to the risk premiums. Independent audit provides a basis for economic transparency and public and community trust in the capital market and the internal and external creditors while providing the optimal grounds for government accountability to the public. As such, it should not be treated simply as an ordinary good and service. Low fees complemented with unhealthy services shake the very foundations of the perceivably fledgling auditing profession. As such, assigning proper fees to auditing tasks is of paramount importance to the integrity of audits.

As with the ever-increasing demand for auditing services in Iran, companies have sought to implement their policies to

enhance their influence over the market and attain a higher share of customers therein. Pricing and market competition in auditing services are of utmost practical and academic significance for legislators, researchers, and investors. Since auditors are compensated through auditing fees and concluding contracts with clients, the determination of auditing fees rate and demanding excessive fees by some auditing firms are among the more contentious issues within this sphere. However, it should be noted that the non-competitive pricing of audits may severely undermine the independence and quality of auditing services.

Arab Mazar Yazdi et al. (2009) performed a study to examine the factors affecting auditing fees in cooperative companies and reported that the capital cost (debt cost and equity cost) of companies has a positive effect on audit quality and fees. Alavi Tabari et al. (2009) argued that the higher the expertise of the auditor, the more accurate the forecasting. Furthermore, they reported that the size of the auditing firm is also inversely related to the deviation of earnings forecasts. Tanani and Nikbakht (2010) examined the factors affecting auditing fees among cooperative companies during 2001-2009. The results indicated that the variables of firm size, Organizational Complexity, type of auditing firm (whether it is Grade A, B, or C), and inflation have a statistically significant correlation with auditing fees. However, the findings on the effect of audit risk and the experience of the person responsible for the dependent variable of auditing fees were inconclusive. Considering the discussion above, the purpose of this study was to examine the effect of size and expertise of the auditors on auditing fees in cooperative companies.

## **Theoretical Foundations**

### **Audit fees**

The auditor's expenses are compensated by a fee established in contracts with clients. Auditors use a variety of factors to price auditing services, and extensive research has been performed to identify and evaluate these factors. Descriptive factors considered in most transactions include risk factors and the size and complexity of the organization

### **Types of audits**

Experts have proposed different types of audits. In *Auditing and Assurance Services*, Alvin A. Arens has proposed three types of audits: financial, compliance, and performance audits. Other researchers have proposed other taxonomies. In terms of organizational outlook, audits can be divided as follows:

**External audit:** External audit is performed by people who are not associated with the organization and are not selected by the corresponding personnel within the organization.

**Internal Audit:** This type of audit is highly prevalent in large-sized firms and organizations. Internal auditors are in the first line of responsibility for auditing and have clarified the duties and authorities outlined in the organizational chart.

### **Types of audits in terms of subject**

#### **Financial audit**

A financial audit is an expert opinion on the integrity and gracefulness of financial statements within the framework of accepted accounting principles. This type of audit, usually performed by specialized auditing firms, involves the review of financial statements, including balance sheets, profit, and loss statements, or accumulated profit (loss) statements and cash flow and accompanying notes.

#### **Compliance Audit**

A compliance audit is a comprehensive review of an organization's adherence to regulatory guidelines through previously obtained evidence and examined frameworks. Throughout a compliance audit, audit reports evaluate the strength and thoroughness of compliance preparations, security policies, user access controls, and risk management procedures. In such auditing, the auditor is not free in determining the appropriateness of the criteria.

#### **Special Audit**

Special audits are single-use audits that seek to scrutinize predetermined issues and may or may not be performed at the request of the shareholders.

### **Research Background**

Chen et al. (2021) performed a study to examine the impact of audit firm size on audit fees, in which four auditing firms were initially selected as high-quality auditors and compared the profits of the companies audited by these four firms with those of the auditing firms themselves.

Palmrose et al. (2021) performed a study on 225 firms and concluded that companies face a 3% reduction in price shares

over approximately one year from the presentation of financial statements. They examine the consequences of their renewal due to the resulting fraud and fraud and separately state that the negative stock price ratio was more reactive to the consequences of the renewal for the declaration of fraud than the fraud. They state that either the renewal presentation due to the auditor of the performance or assignment can be attributed to the company facing a more negative return. As a result of the presentation of the opposite renewal, from less negative returns, the stock market experiences the organization.

Shan et al. (2019) examined the relationship between managerial ownership, audit firm size, and audit fees in Australian listed companies between 2005 and 2015. The results showed that when the levels of managerial ownership are in line with the interests of shareholders (hence the convergence of interests), Managerial ownership is inversely correlated with the size of the audit firm and the audit fee. Conversely, this relationship is positive when the levels of managerial ownership are not in line with the interests of shareholders (i.e., the entrenchment theory).

Torrell (2010) examined the relationship between firm size, revenue, auditor type, type of statement, and the industry in which the firm was operating with timely reports of cooperative companies. The authors employed the financial statements of a sample of 250 cooperative companies. Except for the firm size variable, all variables had a statistically significant relationship with the dependent variable.

Vahedi et al. (2016) conducted a study to examine the relationship between board size and independence and auditing quality and fee in medium and small companies accepted in cooperative companies. These findings revealed a significant and positive correlation between board size and independence, auditing quality, and the fee of medium and small companies. In a study entitled "Agency Theory and Independent Audit Fee: Examination of Free Cash Flow Hypothesis," Khodadadi and Hajizadeh (2011) examined the effect of agency costs arising from the free cash flow (FCF) hypothesis on audit fees. The results confirmed a positive and significant relationship between agency costs arising from the company's free cash flows and auditing fees. Evidence also suggested that in companies with higher FCFs, there is a positive and significant relationship between the level of debt and auditing fees and a negative and significant relationship between the ratio of growth potential and auditing fees.

Etemadi et al. (2010) examined the relationship between auditor expertise and actual profit management and the performance of future operations. The results indicated that companies whose auditor is an industry expert have a higher level of actual profit management than other companies, but their future operational performance does not decrease.

### **Research Methods**

The present research is an applied study that employs descriptive-analytical methods for its purposes. Library archives and documents, particularly those of Rahavard Novin Software and the financial statements of the firms accepted in the Tehran Cooperatives Organization (extracted from the rdis.ir website). That is, available financial statements were used to extract the control variables, while the audit reports of the companies were to extract the information for the main variables.

The statistical population of the research consists of 70 cooperative companies. The study sample was selected from the statistical population using systematic random sampling and the following inclusion criteria:

1. Companies with fiscal years concluding on March 20 throughout the research period.
2. Non-involvement in financial activities, including investment companies, banks, insurance companies, and financial institutions.
3. Availability of all the required data from 2009 to 2019.
4. Hiatuses of less than six months within a fiscal year.

To estimate the research models, the F-Limer test was applied to the years 2009-2019 using data, for 11 years, on a total of 70 companies (i.e., 770 firm-year observations). Hypotheses were analyzed and tested in EViews v. ten and estimated generalized least squares (EGLS) regression with 5% significance levels.

The regression model of the research is as follows:

$$\begin{aligned} \ln AUDF_{it} = & \alpha + \beta_3 AUDSIZE_{it} + \beta_4 AISP_{it} + \beta_5 SIZE_{it} \\ & + \beta_6 REC_{it} + \beta_7 CR_{it} + \beta_8 EMOLS_{it} \\ & + \beta_9 GLIENT_{it} + \beta_{10} BM_{it} + \beta_{11} BINV_{it} \\ & + \beta_{12} LEVE_{it} + \beta_{13} ROA_{it} + \beta_{14} FGN_{it} \\ & + \varepsilon_{it} \end{aligned}$$

In which:

$\ln AUDF$  is the logarithm of auditor fee (the dependent variable),  $\ln revenue$  is the logarithm of corporate income (independent variable),  $SEX$  is the gender of the auditor (independent variable),  $AUD SIZE$  is the audit firm size (independent variable), and  $AISP$  reflects the auditor's industry expertise (independent). control variables of the research include  $SIZE$  for company size,  $REC$  for claims ratio,  $CR$  for current ratio,  $EMOLS$  for company employees,  $GLIENT$  for auditor client year,  $BM$  for book value to market ratio,  $BINV$  for inventory ratio,  $LEVE$  for leverage,  $ROA$  for return on assets Company,  $FGN$  for foreign sales to total sales of the company and  $\varepsilon$  for error.

**Auditor's fee:** The auditor's fee is measured based on the natural logarithm. The reason for using a natural logarithm in calculating the auditor's fee is to standardize and adjust for the fees of large and small companies.

**The revenue of the firm:** One of the factors affecting the audit fee is the revenue of the client firm. For example, per the Iranian Law, companies with more than 5 billion tomans yearly revenues are subject to direct tax and hence auditing requisites. According to article 272 of the Direct Tax Law, the deadline for auditing a report is three months from submitting the financial statement.

**Auditor Size:** Each year, the Society of Certified Public Accountants divides auditing firms into three grades A, B, and C. Since large auditing firms have higher numbers of customers, they have higher negotiating leverage and can put more pressure on client management.

**Auditor industry specialization:** One of the main policies of auditing firms is to increase their ability to meet the client's different needs, hence arriving at an acceptable structure for competitive advantage over other competitors.

**Firm size:** Another factor affecting the audit fee is the size of the firms, which includes the entirety of assets audit risk, among others.

**Receivable ratio:** Although the word receivables are usually used to mean accounts receivable, in a general sense, receivables include two main groups receivable accounts and receivable documents.

**Current inventory turnover:** reflects how a company or a business unit manages its inventory.

**Current ratio:** is one of the liquidity ratios through which the current debt repayment power can be realized and is calculated as follows: current ratio = current assets/current liabilities

**Book-to-market ratio:** Indicates whether the price at which a share of a firm is currently traded is less than, equal to, or more than the value recorded in the accounting records of that firm.

**Cash return on assets** is used to benchmark a business's performance with other businesses in the same industry.

**Foreign sales to total sales:** For foreign sales conducted in Rials.

**Company employees:** One of the other factors affecting the audit fee is the number of employees. Anything that increases the amount of audit risk also increases the amount of the audit fee.

**Auditor client:** The existence of a relationship between client dedication and audit fees indicates that the company's business risk may be affected by intangible assets such as major customers, in which case scrutinizing would be of paramount importance. Investors, creditors, banks, and other actors in this realm can gain more confidence and make better decisions by looking at corporate financial statements and viewing major customers in the list of buyers of the company's products.

**Financial leverage ratio:** leverage is perceivably affected by the financing and operating activities of companies

## Hypotheses

- *Hypothesis 1: The size of the audit firm has a significant effect on the audit fee.*
- *Hypothesis 2: The auditor's expertise significantly affects the audit fee.*

### Findings

Research findings indicated that the mean logarithm of the auditor fee is 7.34. Also, the mean value for the size of the auditor is 1.57, and the mean value for the variable of expertise of the auditor was 0.19, implying that an average of 0.19 market share of each industry was managed by the auditor specialized in that industry. The average ratio of receivables and inventory to total assets was 0.4 and 0.33, respectively.

*Table 1: Results of F-Limer test (originally of intercepts)*

Chow test	f-value	Error level	Result	Type of data
Similarity of y-intercepts	<b>0.08</b>	<b>0.43</b>	Not Rejected	Panel data

Results from Table 1 show that the F-statistic of the model is not significant at the 5% error level (error level greater than

The average current ratio was 0.40, which indicates that the company can repay its short-term debts because this ratio measures its ability to repay short-term liabilities. The average financial leverage was 0.24, indicating that an average of 0.24 of corporate assets could settle debts, and the remaining 0.76 would remain as equity. Their average profitability was 0.46, the highest rate of return on assets was 0.75, and the lowest was 0.13. The average ratio of the book value of the company to its market value is 0.71, indicating the high discrepancy between the daily value of stock prices of sample companies with their book value. The average ratio of foreign sales to the total sales of the company was equal to 0.07, which shows that, on average, 0.07 of the total sales of the company are allocated to foreign transactions.

5%). As such, the method of mixed effects is proposed for this model.

*Table 2: Normality of the dependent variable of the research and error components*

Research variable	Model residual	Dependent variable
Jarque-Bera test value	0.48	1.53
Error	0.75	0.39

According to Table (2), the findings on the normality of the dependent and residual of the model and their level of

significance indicate that the variables above have a normal distribution.

*Table 3: Homoscedasticity test*

Model details		Breusch–Pagan test	ARCH	Harvey	Result	Proposed method
Model	F-value	<b>2.94</b>	<b>72.92</b>	<b>10.23</b>	Heteroscedasticity	GLS
	p.v	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>		

From Table 3, since the error level of the mentioned tests is less than 5%, the findings indicate the heteroscedasticity of research variables. The residual obtained from the estimation

of the research model did not have a homogeneity of variance. In such cases, regression should be estimated using the generalized least squares (GLS) method.

*Table 4: Results from Ramsey reset test*

Model	Ramsey reset test	Error level
Value	<b>0.15</b>	<b>0.69</b>

Considering that the error level of the F-statistic of the Ramsey reset test calculated in Table 4 for is greater than 5%, the

regression model is a linear function, and hence the null hypothesis that the model is linear is confirmed.

*Table 5: Research Model Test Results - Random Effects (GLS)*

Variable	Coeff.	t-student	Error level	VIF
y-intercept	7.30	3.05	0.00	
Audit firm size	0.02	3.69	0.00	1.47

<b>Auditor-industry specialization</b>	0.08	2.36	0.01	1.04
<b>Size of the company</b>	0.07	2.14	0.03	1.02
<b>Receivables ratio</b>	0.007	1.28	0.19	1.11
<b>Current ratio</b>	0.03	1.98	0.04	1.21
<b>Company employees</b>	0.005	1.33	0.18	1.02
<b>Audit client</b>	0.04	3.35	0.00	1.01
<b>Book-to-market ratio</b>	0.01	4.52	0.00	1.50
<b>Inventory</b>	0.05	2.27	0.02	1.05
<b>Financial Leverage</b>	0.03	1.98	0.04	1.10
<b>Return on assets</b>	0.03	2.75	0.00	1.04
<b>Foreign sales</b>	0.05	3.98	0.00	1.24
<b>The adjusted coefficient of determination R<sup>2</sup></b>	0.51			
F regression (error level)	1.98.52	(0.000)		
Durbin-Watson Camera	2.05			

As can be seen, the significance of the Fisher statistic (i.e., 198.52) at the 5% level indicates the overall significance of the estimated model; that is, the independent and control variables can explain the dependent variable. Moreover, the adjusted coefficient of determination ( $R^2$ ) is 0.510, suggesting that 51% of the changes in the dependent variable can be attributed to independent and control variables.

- **Hypothesis 1: The size of the audit firm has a significant effect on the audit fee**

According to the results of Table 5, T-Student Statistics for the independent variable of the size of the audit firm and its significance level (p.v) are 3.69 and 0.00, respectively, and its coefficient is 0.02. In other words, with a 0.01 increase in the size of the audit firm, the audit fee increases by 0.02. Considering that the level of error considered for this research was 0.05, it can be concluded that the size of the audit firm has a significant effect on the audit fee, hence establishing the first hypothesis at the 95% confidence interval. Moreover, the coefficient for the audit firm is size positive, meaning that the size of the audit firm increases the audit fee.

- **Hypothesis 2: The auditor's expertise has a significant effect on the audit fee**

According to the results from Table 5, the T-student statistics for the variable of auditor's expertise and its significance level (p.v) are 2.36 and 0.01, respectively, and its coefficient is 0.08, implying that, with a 0.01 increase in the variable of auditor's expertise, the audit fee increases by 0.08. Considering that the level of error considered for this study was 0.05, it can be

concluded that the auditor's expertise has a significant effect on the audit fee, and the second hypothesis of the research is confirmed at the 95% confidence interval. Furthermore, the coefficient of the auditor's expertise is positive, indicating that the higher the expertise of the auditor, the higher the company audit fee.

The results of control variables also showed that there is a significant positive relationship between company size, book value to market ratio, return on assets, auditor tenure, inventory to sales ratio, and financial leverage with audit fees. That is to say, companies with higher assets, higher profitability, and higher sales pay higher auditing fees. Also, as the company's liabilities and its leverage heighten, so does the audit risk, and hence the auditor raises the intensity of auditing tasks to reduce the audit risk and subsequent risks, increasing the audit fee. The significance of the mentioned control variables indicates their effect on the dependent variable, hence their justified selection.

### **Conclusion**

This study aimed to examine the effect of size and expertise of the audit firm on auditing fees in cooperative companies. As for the first hypothesis, the authors sought to examine the effect of the size of the audit firm on the audit fee, and the findings revealed that the size of the audit firm has a positive and significant effect on the audit fee. Therefore, as a result, it confirmed the first research hypothesis at a 95% confidence interval. The larger the perceived size of the auditing firm, the

higher the fee they are entitled to receive. The results of this hypothesis are consistent with those of Vahedi et al. (2020).

The size of the audit firm is one of the factors that affect the number of auditing fees. DiAngelo (1986) argues that larger audit firms provide better quality audit services because they are more inclined to maintain their reputation in the job market, yet they are not as worried about losing given their extensive pool of clients. Such institutions are thought to provide better auditing services due to access to more quality resources and facilities for training auditors and performing various audit-related tasks. Auditing firms can also improve auditing quality by training employees and using industry-tailored technology. Auditing firms seek to gain reputation and credibility in their respective industry, thus providing high-quality auditing services for the sake of higher audit fees.

The second hypothesis required the researchers to examine the effect of the auditor's expertise on the audit fee. To this end, the findings from the panel data indicated that the auditor's expertise has a positive, significant effect on the audit fee, confirming the first research hypothesis at a 95% CI. Companies that seek the services of industry-specific auditors and expect high-quality auditing offer higher auditing fees for auditors that have perceived higher quality, one that has been achieved through experience and expertise. Industry-specific auditors spend more due diligence on the accounts of companies and eventually specialize in that particular industry. This diligence is due to maintaining their professional reputation and credibility and avoiding lawsuits against them, leading to increased audit quality. The findings of this hypothesis are consistent with those of Calmula et al. (2020). Research findings imply that investors and analysts are better off investing in companies that opted for large auditing firms for their financial statements. Furthermore, shareholders and company executives are advised to submit their financial statements as much as possible to large auditing firms with expert teams and strong quality control.

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