Auditor choice and Audit Fees in Family Firms: Evidence from Tehran Stock Exchange

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Abstract

Purpose - The main aim of this paper is to examine auditor choice and audit fees in family firms on the Tehran Stock Exchange.

Design/methodology/approach – The hypotheses set are tested by analysing all firms except financial firms listed on the Tehran Stock Exchange for the period of 10 years, using a sample of 1,050 firm-year observations. Probit and ordinary least squares regression (OLS) is used to investigate the associations proposed in the research hypotheses.

Finding - Our findings show that in family firms, in contrast with non-family firms, the large auditor is less often selected as the firm's auditor. The findings also show that family firms pay higher fees for their audits in comparison with non-family firms and show that the choice of large auditor reduces the relationship between family ownership and audit fee. The additional analysis shows that choosing industry specialist auditors is less likely in family firms compared to non-family firms.

Practical implications – The importance of this research is in the increased awareness for researchers and users about family ownership and the selection of auditors and audit fees in the emerging market capitalization of Iran. This research contributes to the accounting literature by providing empirical evidence of the effects of family control and ownership on audit pricing and auditor choice in a developing economy context. Also, this research can provide a new route for research on this issue in developing countries, e.g., Iran.

Originality/value - These findings were discovered by means of the financial data in the particular environmental conditions of Iran which differ from features and conditions for institutional investors in developed countries.

Key words - Family firms, Auditor choice, Audit fee, Agency problem

1. Introduction

Despite the substantial volume of empirical research in the area of family businesses (e.g., Faccio & Lang, 2002; Burkart, Wang, 2006; Ali, Chen & Radhakrishnan, 2007; Wu, Lin & Bardhan, 2010; Ghosh & Tang, 2015; Corten et al, 2017), there are a very limited number of research papers on family firms in connection with auditing (Ho & Kang, 2013; Kang, 2014; Khan, Muttakin & Siddiqui, 2015). There has been a remarkable growth in family businesses[1], particularly in emerging economies across Asia (Khan et al, 2015). According to the reports from Credit Suisse (2011), many Asian economies are dependent on family businesses. In the current decade, this has accounted for 32% of market capitalization.

According to the literature undertaken, family businesses face different agency problems compared with non-family businesses (Villalonga & Amit, 2006). These appear to be of two kinds, type 1 and 2 agency problems. Agency problems of type 1 (separation of ownership from control) are seldom found in family firms and it is therefore expected that there would be less demand for choosing a qualified auditor and performing a higher quality audit in these firms. As a result, lower audits fees are paid (Hu & Kang 2013). On the other hand, due to type 2 agency problems between minor and major shareholders and a higher potential for family firms to participate in fraudulent activities and activities jeopardizing the interests of other shareholders, audit risk is increased. Thus, to reduce these risks, auditors may have to increase the volume of the audit operation and consequently charge higher fees (Khan et al, 2015). A recent study by Mande et al (2017), investigates the association between the choice of a successor auditor and auditor search periods. Their results show that long search periods associated with certain clients make them less likely to be accepted by a large number of auditors. Existence of such conflicting issues make audit fees and auditor selection in family businesses an interesting field for research. A more recent study by Shan et al (2019) investigates the overall risk of audit clients with regard to the managerial ownership and auditor selection. They examine the relationship between managerial ownership, audit fees and audit firm size by using a sample of Australian listed firms. They found that the significant association between the audit fees and firm size is related to the level of managerial ownership.

Two circumstances are imaginable from earlier research on audit fees and auditor choice. Firstly, regarding agency problems, it is expected that family firms would pay lower audit fees as they have a lower demand for audit quality. Secondly, since there may be stronger motivations in family firms towards fraudulent activities that may increase the audit risk, auditors may be asked to undertake audits that are far wider and would want to charge higher audit fees to ease such risks. As the earlier study by DeVilliers et al (2013) shows, audit fees do not immediately or completely adjust to changes in their elements as they are 'sticky'. Such arguments additionally make choice and fees of auditor an interesting topic in the family businessess research field.

Research by Ben-Ali and Lesage (2011) demonstrate that ownership structure of firms will affect audit issues such as audit fees and auditor selection, by influencing the severity of the

[1] A family firm is a firm whose founding members in a family are appointed as the senior management. The board of directors or shareholders is then considered as the family firm (Anderson & Reeb, 2003; Chen & Cheng, 2008).

agency problem, influenced by size, risk and complexity of the firm, and the importance of these factors varies in different countries. In this study, the data was collected from Iran for two main reasons. First, due to the different ownership structures of the firms in Iran, and the privatisation process of some firms, it is essential that we study the change in ownership structure from the perspective of auditors responsible for the authenticity of financial statements and note the effect on the severity of the agency problem. Second, due to low transparency and less information about the ownership and nature of firms and consequently a lack of recognition and separation of family members, there is little research on family firms in Iran. Therefore, this study replies to the call both by Trotman and Trotman (2010) and Hay (2013) who focused on auditing issues in family firms listed publicly.

Before market liberalisation, the Iranian audit market was dominated by the Audit Organization (IAO). After the market liberalisation in 2001, private auditors were allowed to provide auditing services to non-state-owned companies. Given that, the number of competitors significantly increased (Bagherpour, Monroe & Shailer, 2014; Mohammad-Rezaei & Mohd-Saleh, 2016). It is considered important, therefore, to study audit fees and auditor choice in Iranian companies with a different ownership structure and auditing environment from Western countries, and where there is no activity of the Big 4 audit firms.

Unfortunately, there is little research in this field about other countries)Hu & Kang, 2013, Kang, 2014; Khan et al 2015) with different regulatory environments, requirements and governance structures, so evidence from other countries could not be generalised exactly to Iran. Nonetheless, the results of the research could be of some importance to other users and researchers. Findings of the research could give some information to market participants about the measures of auditor selection and audit fees and the characteristics of finance, audit and governance in family firms. These findings may also encourage audit institutes to review the market for audit services in family firms. Moreover, in addition to an investigation of how audit fees can be affected by a different format of ownership fees, this study offers more information about the association of family ownership and auditor selection, accepting that family firms are a common and important structure of ownership. In this study, we test our hypotheses for all the listed companies in the Tehran Stock Exchange (TSE) except financial companies, between the years 2007 and 2016. Our sample includes 1,050 firm-years. Findings of the research show that in family firms, in comparison to non-family firms, the large auditor is selected less often as the firm's auditor. (Note: Audit Organization or IAO is the main audit institute in Iran; there is no international large audit institute; and the state institute, the Audit Organization, is considered the largest Iranian audit firm.) Furthermore, the research results show that non-family firms pay lower fees for their audits compared with family firms. Our results also show that auditor choice (of the IAO) lessens the association between audit fee and family ownership. The results of the additional analysis show that family firms are also less likely to choose industry specialist auditors compared with non-family firms. This appears to provide new information compared with other studies. It should of course be noted that these findings were discovered by means of financial data in particular environmental conditions, in Iran, which differ from the features and conditions for institutional investors in developed countries.

The current study is limited to studies of audit fees and auditor choice in family businesses with regards to developing economies. Unlike earlier studies on family firms (e.g., Ho & Kang, 2013; Kang, 2014), this study provides indication of the impact of family control

on audit fees and auditor choice where, as already indicated, there is a different ownership structure and auditing environment than in developed countries.

In Section 2 of this study, we provide a short introduction to Iranian family businesses and the audit environment to develop our research hypotheses. In Section 3, we provide the research variables, research model and the selected sample. We present our analysis and findings in Section 4 and, finally, in Section 5 we provide the conclusion.

2. Research Background and hypotheses

2.1. Institutional background

Traditional and family businesses are expanding, and surprisingly, in Iran and have made fortunes for their participants. Such family ownership is not solely for business of course, Because of the social status of families in Iran, wealth and power are in the hands of certain individuals and are being further developed.

Prior research by Mohammad-Rezaei & Mohd-Saleh (2016) indicates that, before the Iranian Revolution in 1979, both international and national audit companies were involved in the Iranian auditing market. Following the revolution, however, three semi-state audit firms were created. In 1987, these three audit firms were merged and a new state body, under the name The Iranian Audit Organization (IAO), was formed.

There is weak demand for audit services in the audit market in Iran (Mohammad-Rezaei et al. 2015, Mohammad-Rezaei & Mohd-Saleh, 2016) and there is a less diversity in the audit market. To obtain more details about the audit environment, audit committees and gender diversity in Iran, see Oradi and Izadi (2019).

2.2. Hypotheses development

The reason for seeking audit services can be considered an information asymmetry, and due to a conflict of interest among investors and managers (Watts & Zimmerman, 2001; Healy, & Palepu, 2001). Family firms, compared with non-family firms, are as indicated less prone to agency problem type 1. Anderson and Reeb (2003) show that founding families are present in their firms from the start and are usually appointed to the managerial vacancies with certain rights of ownership and management control. Consequently, they can monitor the firm effectively. This causes less conflict of interest and less information asymmetry among shareholders and managers. Furthermore, it is also more likely that founding families will ignore interest in short-term profit due to the incentive to transfer the business to a future generation and to maintain the family reputation. Accordingly, family firms in comparison with non-family firms, are more motivated to produce a high-quality profit report. The motivations for producing an honest profit report may therefore lead to a decrease in the demand for a higher quality audit where the investors are of the opinion that family ownership increases corporate governance (Wang, 2006). Niskanen et al (2011) found that an increase in family ownership results in a decrease in the probability of employing one of the large auditors (from the Big 4). Hence it is expected that, with family firms, there would be less demand for employing qualified auditors from the big firms as monitoring agents to reduce agency problems of type 1.

Nonetheless, due to the special structure of ownership in family businesses, maintaining family interests may be preferred to that of maintaining the interests of shareholders (agency problem type 2). As a result, minor shareholders may not have access to basic and important information about the firm, and the interests of this group may be at risk, particularly in the longer term (Abdolmohammadi, Kvaal & Langli, 2010). From the theoretical perspective, supervisor shareholders in family firms may be more motivated to gather wealth than would other shareholders (Morck et al, 1988; Shelifer & Vishny, 1997). Furthermore, from the perspective of this theory and due to the existence of agency problems type 2, there could be the temptation in family firms to manipulate the accounting numbers for personal interest. As a result, a higher quality audit may be necessary to maintain shareholder interests in family firms. Following Fan and Wong's (2005) research, the main role for the external auditors would be to mitigate agency costs which arise from information asymmetries between owners and client managers.

Hu and Kang (2013) investigated audit fees and auditor selection in the S&P family firms in the U.S. They found that American family firms are inclined to employ smaller and even disqualified auditors. However, Kang (2014) studied the selection of industry expert auditors in the S&P family firms in the U.S. and the findings of this research show that employing industry expert auditors in family businesses in the U.S. is higher than in non-family firms. This therefore indicates that family firms may be more motivated to augment their financial reporting quality. However, Khan et al (2015) in studying audit fees and auditor choice in family firms in Bangladesh, also showed that family firms, as compared with non-family firms, chose lower quality auditors. Therefore, in accordance with the literature and history discussed here, the research's first hypothesis is as following:

H1*: There is a strong relationship between family ownership of firms and the choice of auditor (IAO and other firms).*

According to agency theory, as indicated, family firms increase or decrease different agency problems, consistent with decreasing the effect of and lessening type 1 agency problems. As a result, it is assumed that families are better managerial supervisors than other large shareholders. Thus, it could be claimed that, since families are better supervisors, they are less likely to ask for a higher quality audit and are less likely to pay a higher audit fee (Khan et al 2015). On the other hand, due to the existence of type 2 agency problems in family firms, owners may be willing to perform beneficial activities such as transactions with related parties. This increases the risk for auditors assessing fraudulent reports. This is consistent with the COSO Report (2010) which studied samples of fraudulent reports during 1998 to 2007 and considered transactions with related parties a potential risk factor for fraud (Hu and Kang 2013). Moreover, due to concentrated ownership, family members could squeeze out minority shareholders to stabilize their position in family firms (Khan et al 2015). Thus, where client firms have more type 2 agency problems, auditors are required to undertake further investigations to decrease audit risk. Consequently, this latter problem in family firms may lead to an increase in the audit fee.

Nevertheless, to repeat the point mentioned above, family owners appear more willing to monitor the work of managers more strictly, which may lead to a decrease in the risk of major

problems in the financial reporting and, as a result, this would reduce auditor effort. Theories of demand show that direct and precise surveillance on firm activities by family owners could reduce information asymmetry among managers and owners (Ali et al., 2007, Chen & Cheng, 2008) and so reduce demand for independent audit services. Khan et al (2015) and Hu and Kang (2013) found that family businesses compared with non-family businesses pay lower audit fees. However, it should also be noted recent research by Li et al, (2020) indicates that increases in audit fees may also be linked to cyber incidents.

In general, theories of supply and demand lead us to predict that family firms, in contrast with non-family firms, should require less audit work and consequently pay lower audit fees due to lower representation problems between owners and managers. Nonetheless, the presence of agency problems between major and minor shareholders would lead us to predict that these companies would pay higher audit fees than non-family firms, due to higher audit risk and effort. Hence, considering the above literature, the second hypothesis of the research is:

H2*: There is a significant relationship between family ownership of firms and the audit fee.*

The higher audit fee therefore implies a higher audit quality, other things being equal, either through more audit effort or through greater expertise of the auditor (Francis, 2004). Hence, it is expected that the choice of higher quality auditors by family firms would affect the audit fee. A third hypothesis of the research, therefore, is as follows:

H3*: Auditor choice affects the association between family ownership of firms and the audit fee.*

3. Sample Selection and Research Design

3.1. Sample selection

Table 1 demonstrates the process of selecting sample data for the current research. We collected the data from listed companies on the Tehran Stock Exchange (TSE) between 2007 and 2016, paying regard to auditor and corporate governance characteristics, family firms and other characteristics of client firms.

Table 1. Sample selection procedure and year distribution

	Number of Observations
Firm-year observations from the TSE database during 2007–2016	3,450
Less: the firms with no continuation from 2007 to 2016	(550)
Less: the firms with changes in their activities or their fiscal year	(250)
Less: the firms with missing data (Non-disclosure of information such as audit fees, where disclosure is voluntary)	(990)
Less: Observations from financial firms	(610)
Final sample used in the baseline regression analysis	**1,050**

Note: the final sample covers 105 non-finacial firms observed over 10 years which comprises of 27 family firms and 78 non-family firms. Our sample includes annual observations from Jan 2007 to Dec 2016 which is collected from the Tehran Stock Exchange..

The primary sample contained 3,450 firm-year observations from the Tehran Stock Exchange. We removed 550 observations from the sample for the firms with no continuation from 2007 to 2016. 250 observations of firms were removed from the sample because of changes in either the kind of activity they undertook or in their financial year. A further 990 observations from firms with missing data (non-disclosure of information such as audit fees, because of its voluntary disclosure) were also removed from the sample. Finally, we removed 610 observations from financial firms. This produced a final sample of 1,050 firm-year observations (see Panel A of Table 3). Panel B of Table 3 displays the firm-year observations of the selected sample.

3.2. Measuring family ownership

According to earlier research (for example, Anderson and Reeb, 2003; Chen and Cheng, 2008) a percentage of share ownership is captured by the members of the family and they control the firm activities or have a significant influence on the company. Paragraph 8, No. 20 of the Iranian accounting standard states that, if shareholders possess at least 20% of the authority over an investment unit, they have a great influence on the company. Furthermore, under Article 107 of Company Law in Iran, all public companies are required to establish a board of directors by means of shareholders. This board should include at least 5 members. Thus, rationally it can be said that, if a shareholder owns 20% or more of the company's shares, he is considered as a member of the board of directors and thus could be able to control the company's operations.

3.3. Model Specification

Following prior research (e.g., Chaney et al, 2004; Ho & Kang, 2013, Kang, 2014), to test the hypotheses, two regression models (probit and ordinary least square (OLS)) are used. Model (1) examines the association between family firms and auditor choice (H1). Model (2) examines the relation between family firms and audit fee (H2), and Model (3) examines the impact of auditor choice on the relationship between audit fee and family firms (H3).

$$AUDITOR\ CHOICE_{it} = \alpha_0 + \alpha_1 FAM_{it} + \alpha_2 LTA_{it} + \alpha_3 CHTA_{it} + \alpha_4 ATURN_{it} + \alpha_5 DA_{it} + \alpha_6 CURR_{it} + \alpha_7 QUICK_{it} + \alpha_8 ROA_{it} + \alpha_9 LOSS_{it} + \alpha_{10} ROA*LOSS_{it} + \alpha_{11} FORGN_{it} + \alpha_{12} BIIND_{it} + \alpha_{13} CEODUAL_{it} + \alpha_{14} OWNER_{it} + \sum_{nj} YEAR_j + \sum_{yi} IND_i + \varepsilon_{it} \quad (1)$$

$$AUDIT\ FEE_{it} = \beta_0 + \beta_1 FAM_{it} + \beta_2 AUDITOR\ CHOICE_{it} + \beta_4 SPEC_{it} + \beta_5 OPINION_{it} + \beta_6\ TENURE_{it} + \beta_7 LTA_t + \beta_8 ATURN_{it} + \beta_9 DA_{it} + \beta_{10} CURR_{it} + \alpha_{11} QUICK_{it} + \beta_{12} ROA_{it} + \beta_{13} LOSS_{it} + \beta_{14} ROA*LOSS_{it} + \beta_{15} FORGN_{it} + \beta_{16} BIIND_{it} + \beta_{17} CEODUAL_{it} + \beta_{18} OWNER_{it} + \sum_{nj} YEAR_j + \sum_{yi} IND_i + \varepsilon_{it} \quad (2)$$

Regarding the above-mentioned models, dependent variables of the research include a variable (*AUDITOR CHOICE*) (if the Audit Organization[2] in Iran undertakes the firm's audit, it equals 1, otherwise it is zero) and an audit fee variable (*AUDIT FEE*) (which equals to the natural logarithm of the audit fee). The independent variable of this research is *FAM* (it is 1 if the company is a family firm and zero otherwise). We also used *AUDITOR CHOICE* as a mediator variable in Model (3).

$$AUDIT\ FEE_{it} = \beta_0 + \beta_1 FAM_{it} + \beta_2 AUDITOR\ CHOICE_{it} + \beta_3 AUDITOR\ CHOICE_{it}*FAM + \beta_4 SPEC_{it} + \beta_5 OPINION_{it} + \beta_6\ TENURE_{it} + \beta_7 LTA_t + \beta_8 ATURN_{it} + \beta_9 DA_{it} + \beta_{10} CURR_{it} + \alpha_{11} QUICK_{it} + \beta_{12} ROA_{it} + \beta_{13} LOSS_{it} + \beta_{14} ROA*LOSS_{it} + \beta_{15} FORGN_{it} + \beta_{16} BIIND_{it} + \beta_{17} CEODUAL_{it} + \beta_{18} OWNER_{it} + \sum_{nj} YEAR_j + \sum_{yi} IND_i + \varepsilon_{it} \quad (3)$$

3.4. Control Variable

Similar to previous studies (Abbott & Parker, 2000; Carcello et al, 2002; Ashbaugh et al, 2003; Chaney et al, 2004; Hu and Kang 2013; Kang, 2014), we suppose that the size and the risk factor of the client firm impact on audit fees and auditor choice. We represent firm size as the natural logarithm of total assets (*LTA*) and the firm complexity control by the absolute value of changes in total assets (*CHTA*), total turnover of assets (*ATURN*), ratio of current assets (*CURR*) and in foreign countries (*FORGN*). We employed ratios for long-term debt (*DA*), quick ratio (*QUICK*), return on assets (*ROA*) and an indicator for company losses (*LOSS*) to measure financial structures and the profitability of client firms, to control the firm risk. Consistent with

[2] Note: The Audit Organization in Iran is a state audit institute offering professional audit services. Compared with other audit institutes, it has more employers and is of longer age. Thus, in this research, the Audit Organization is considered a 'big' audit firm. DeAngelo (1981) argues that audit quality is directly associated with the auditing firm's size, although for a different reason.

the research of Ashbaugh et al (2003) and Hu & Kang (2013), the variable of a negative return on assets (*ROA*LOSS*) was also used. The more negative the return of the company, the more the increase in the audit risk and the effect on the time budget of the audit.

Regarding the audit fee model, the factors considered are those that it may affect the audit-client relationship (Carcello et al, 2003; Hu & Kang, 2013; Huang, Chang & Chiou, 2016), including 'big auditor' choice (*AUDITOR CHOICE*), industry-specialist auditors (*SPEC*), auditor's opinion (*OPINION*) and auditor tenure (*TENURE*). Furthermore, in this research the effect of corporate Governance[3] characteristics on auditor choice and the audit fee are controlled (Carcello et al, 2002, Hu & Kang, 2013), including Board independence (*BIIND*), CEO duality (*CEODUAL*) and ownership concentration (*OWNER*). Furthermore, industry with the year-specific fixed effects ($\sum_{nj} YEAR_j + \sum_{yi} IND_i$) are comprised in the models. The variable definitions are provided in Table 2.

Table 2. Definition of variables

AUDITOR CHOICE	*1 If the audit organization in Iran undertakes the firm's audit, and 0 otherwise;*
AUDIT FEE	*fees paid by a firm to the auditor for audit services (natural log);*
FAM	*1 if the firm is identified as a family firm, and 0 if not;*
LTA	*natural logarithm of total assets;*
CHTA	*absolute value of change in total assets from the previous year;*
ATURN	*assets turnover, measured as sales divided by total assets;*
DA	*long-term debts divided by total assets;*
CURR	*current assets divided by total assets;*
QUICK	*current assets minus inventory divided by current liabilities;*
ROA	*earnings before extraordinary items divided by lagged total assets;*
LOSS	*1 if net income before extraordinary items is less than zero, and 0 otherwise;*
FORGN	*1 if a firm has foreign sales, and 0 otherwise;*
SPEC	*1 if the client's audit firm audits at least 20 percent of sales in the client's industry, and 0 otherwise*
OPINION	*1 if the firm receives a modified audit opinion, and 0 otherwise*
TENURE	*the number of years of the auditor-client relationship (the base year for this variable is considered as 2004);*
BIND	*the percentage of independent directors on the board;*
CEODUAL	*1 if the CEO is also chairman of the board, and 0 otherwise;*
OWNER	*the percentage of the major investors of the firm (more than 5%)*
$YEAR_j$	*year-specific fixed effects (2007-2016);*
IND_i	*industry-specific fixed effects.*

4. Empirical Results

4.1. Descriptive Statistics

We provide a summary of the descriptive statistics in Table 3, both for the full sample in Panel A and by firm type as a subsample of the family and non-family companies in Panel B. As can be seen in Panel A, 21 percent of the firms chose the big' audit firm (the IAO) with the mean

[3] Note: In Iran, companies have been required to form an audit committee since 2012, which was part-way through the years chosen for the research.

natural logarithm of audit fees being 6.233. The percentage of family firms with IAO is presented in Panel B, as indicated demonstrating descriptive statistics by firm type. The results show that the audit fee is meaningfully lower as compared with non-family firms. These results are in accordance with Hu and Kang's (2013) findings of family firms in the S&P 500, and Khan et al's (2015) findings of Bangladeshi family firms.

As can be seen in Panel B, 25% of the sample is accounted for by the family firms. They have smaller total assets (LTA), total turnover of assets (ATURN), return on assets (ROA), industry-specialist auditors (SPEC) and auditor tenure (TENURE), as compared to non-family firms, and the ratio for long-term debt (DA), the indicator for loss (LOSS) and the auditor's opinion (OPINION) are higher. Family firms also tend to have a lower Board independence (BIIND), CEO duality (CEODUAL) and ownership concentration (OWNER).

Table 3. Descriptive Statistics

Panel A: Descriptive Statistics for the Full Sample (n = 1050)

Variable	Mean	Std. Dev.	Q1	Median	Q3
AUDITOR CHOICE	0.213	0.409	0.000	0.000	0.000
AUDIT FEE	6.213	0.893	5.560	6.165	6.750
Financial and Audit characteristics					
LTA	13.329	1.312	12.400	13.300	14.110
CHTA	0.111	0.231	0.010	0.100	0.220
ATURN	0.927	0.579	0.570	0.8	1.900
DA	0.085	0.105	0.020	0.050	0.110
CURR	0.659	0.198	0.530	0.700	0.820
QUICK	1.406	0.780	0.910	1.210	1.750
ROA	0.123	0.156	0.020	0.110	0.210
LOSS	0.143	0.351	0.000	0.000	0.000
FORGN	0.608	0.488	0.000	1.000	1.000
SPEC	0.431	0.495	0.000	0.000	1.000
OPINION	0.580	0.493	0.000	1.000	1.000
TENURE	3.252	2.453	1.000	3.000	4.000
Corporate Governance characteristics					

BIIND	0.627	0.192	0.600	0.600	0.800
CEODUAL	0.200	0.400	0.000	0.000	0.000
OWNER	0.762	0.203	0.670	0.720	0.910

Panel B: Descriptive Statistics by Firm Type

Variable	Family firms (n= 266)		Non-family firms (n= 784)		Differences in Means	p-value
	Mean	Std. Dev.	Mean	Std. Dev.		
AUDITOR CHOICE	0.082	0.016	0.257	0.015	-0.175	0.000
AUDIT FEE	6.123	0.041	6.243	0.034	-0.120	0.057
Financial and Audit characteristics						
LTA	12.961	0.067	13.454	0.048	-0.493	0.000
CHTA	0.100	0.013	0.114	0.008	-0.014	0.391
ATURN	0.843	0.028	0.955	0.021	-0.112	0.006
DA	0.108	0.008	0.077	0.003	0.031	0.000
CURR	0.650	0.125	0.663	0.007	-0.013	0.378
QUICK	1.396	0.049	1.419	0.027	-0.023	0.371
ROA	0.096	0.010	0.132	0.005	-0.036	0.001
LOSS	0.199	0.024	0.125	0.011	0.074	0.002
FORGN	0.575	0.030	0.619	0.0173	-0.044	0.197
SPEC	0.308	0.028	0.473	0.0178	-0.165	0.000
OPINION	0.661	0.029	0.552	0.0177	0.109	0.001
TENURE	2.740	0.108	3.426	0.093	-0.686	0.000
Corporate Governance characteristics						
BIIND	0.600	0.012	0.636	0.006	-0.036	0.007
CEODUAL	0.161	0.022	0.214	0.014	-0.053	0.064
OWNER	0.740	0.012	0.770	0.007	-0.030	0.041

Statistical test for differences in the mean is based on a two-tailed t-test.

See Appendix A for variable definitions.

Table 4. Pearson Correlation Matrix

Var	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1																		
2	**-0.18**																	
3	**-0.05**	**0.29**																
4	**-0.16**	**0.17**	**0.41**															
5	-0.02	0.02	0.01	**0.19**														
6	**-0.08**	-0.03	0.02	**-0.13**	**-0.21**													
7	**0.12**	0.03	**-0.06**	**-0.05**	**-0.09**	**-0.14**												
8	-0.02	**-0.07**	0.01	**-0.06**	0.04	**0.21**	**-0.42**											
9	-0.02	0.00	**-0.17**	**-0.12**	0.02	**-0.09**	**0.26**	**-0.36**										
10	**-0.09**	0.04	**-0.06**	0.02	**0.10**	**0.29**	-0.23	0.03	**0.42**									
11	**0.09**	-0.04	**0.08**	-0.03	**-0.15**	**-0.16**	**0.21**	-0.01	**-0.25**	**-0.58**								
12	-0.03	**0.12**	**0.19**	**0.26**	-0.00	-0.01	-0.03	**-0.08**	0.04	**0.09**	**-0.06**							
13	**-0.14**	**0.39**	**0.31**	**0.31**	-0.00	0.03	0.00	-0.00	-0.02	**0.06**	0.04	**0.11**						
14	**0.09**	**-0.13**	**-0.13**	**-0.05**	0.02	**-0.09**	0.04	**0.06**	**-0.16**	**-0.26**	**0.16**	-0.04	**-0.07**					
15	**-0.12**	**0.58**	**0.35**	**0.16**	0.01	**-0.05**	0.02	-0.04	**-0.10**	**-0.07**	0.03	-0.02	**0.32**	**-0.08**				
16	**-0.08**	0.01	**-0.09**	-0.03	-0.01	-0.04	-0.04	**-0.12**	**0.19**	**0. 19**	**-0.08**	**0.09**	-0.03	**-0.10**	-0.04			
17	**-0.05**	**0.06**	**0.09**	0.02	-0.04	0.04	-0.00	-0.00	**-0.10**	**-0.05**	-0.02	**-0.07**	-0.02	0.02	**0.10**	**-0.17**		
18	**-0.06**	**0.17**	**0.08**	**0.09**	0.00	-0.04	**0.14**	**-0.12**	**0.11**	**0.05**	0.00	**0.15**	0.03	**-0.24**	**0.09**	**-0.10**	0.02	

Variable = *(1): FAM, (2): AUDITOR CHOICE, (3): AUDIT FEE, (4): LTA, (5): CHTA, (6): ATURN, (7): DA, (8): CURR, (9): QUICK, (10): ROA, (11): LOSS, (12): FORGN, (13): SPEC, (14): OPINION, (15): TENURE, (16): BIIND, (17): CEODUAL, (18): OWNER.*

Coefficients in **bold** are significant at 0.1 level. All the continuous variables are winsorized at 1% and 99%.

See Appendix A for variable definitions.

Table 4 reports the correlation matrix of the main variables. The two variables of audit fee and auditor choice are significantly and negative correlated with FAM, the indicator for the family firm.

4.2. Regression Results for Auditor Choice

The main regression results for testing H1 are presented in Table 5. The result shows that there is a negative coefficient for FAM (-0.701, p = 0.000). This result shows that, in family firms, the IAO is seldom selected as the audit institute. In terms of the other variables, it can be said that there is a positive and significant relationship between the variables of company size (LTA), the foreign sales (FORGN), the CEO duality (CEODUAL), and ownership concentration (OWNER) with selecting the IAO. But no significant relationship is observed between other variables used in this model and selecting the IAO.

Table 5. Regression results of family ownership and auditor choice (IAO)

Model	Model 1			
Dependent Variable	AUDITOR CHOICE (IAO)			
Variable	***Coeff.***	***Std. Err.***	***Z statistic***	***p-value***
Intercept	-3.601	0.718	-5.01	0.000
FAM	-0.701	0.135	-5.17	0.000
LTA	0.153	0.040	3.75	0.000
CHTA	0.062	0.221	0.28	0.779
ATURN	-0.133	0.106	-1.26	0.208
DA	0.538	0.565	0.95	0.341
CURR	-0.036	0.301	-0.12	0.904
QUICK	-0.134	0.088	-1.51	0.131
ROA	0.641	0.473	1.36	0.175
LOSS	-0.026	0.211	-0.12	0.902
ROA LOSS*	-0.102	1.671	-0.06	0.951
FORGN	0.197	0.111	1.78	0.075
BIIND	-0.060	0.268	-0.23	0.822
CEODUALI	0.246	0.117	2.10	0.036
OWNER	1.226	0.303	4.04	0.000
Year Dummies	Included			
Industry Dummies	Included			
Pseudo R-square	0.121			
LR (p-value)	132.22 (0.000)			
Observations	1050			

Note: The dependent variable is AUDITOR CHOICE (IAO) and the independent variable of this research is FAM. All the continuous variables are winsorized at 1% and 99%. All the p-values are two-tailed. See Appendix for variable definitions.

4.3. Regression Results for Audit Fee

Table 6 presents the regression results for testing H2 and H3. As shown in Model 2 (H2), the coefficients on FAM (0.093, p = 069) are significantly positive (at 0.1 level), which suggests

that the audit fee of family firms is 9.3% higher than that of non-family firms. Our result suggests that agency problems increase audit risk for family firms in Iran. (Note: Agency problems of type 2 and a high potential for family firms to participate in fraudulent activities and activities jeopardizing the interests of other shareholders are present, so audit risk is increased). The results of Model 3 (H3) also shows that the coefficients for AUDITOR CHOICE* FAM (-0.271, p = 0.095) are significantly negative (at 0.1 level).

In the following table which studies the other variables of the research, there is a significant positive relationship between the financial characteristics of the company [LTA (the company size), ATURN (the total turnover of assets), LOSS (an indicator for loss), ROA* LOSS (negative return on assets), FORGN (the foreign sales)], and the audit characteristics of the company [AUDITOR CHOICE (IAO), SPEC (industry-specialist auditors), and TENURE (auditor tenure)] in addition to the audit fee. In contrast, there is a significant negative relationship between the DA (debt ratio), ROA (return on assets), and the OPINION (auditor's opinion) and the audit fee. In terms of corporate governance characteristics, the results show that there is a significant negative relation among the BIIND (independent board) and audit fee. On the other hand, the results show that there is a significant positive relationship between the CEODUALITY (CEO duality) and the audit fee, with no significant relationship between other variables and the audit fee.

Table 6. Regression results of family ownership and auditor choice (IAO) on audit fee

Model	Mode1 2		Model 3	
Dependent Variable	AUDIT FEE		AUDIT FEE	
Variable	***Coeff.***	***p-value***	***Coeff.***	***p-value***
Intercept	3.616	0.000	3.577	0.000
FAM	0.093	0.069	0.124	0.023
AUDITOR CHOICE	0.292	0.000	0.319	0.000
AUDITOR CHOICE FAM*			-0.271	0.095
SPEC	0.258	0.000	0.265	0.000
OPINION	-0.188	0.000	-0.185	0.000
TENURE	0.037	0.000	0.038	0.001
LTA	0.128	0.000	0.127	0.000
ATURN	0.081	0.047	0.081	0.049
DA	-0.434	0.075	-0.470	0.055
CURR	0.086	0.517	0.095	0.473
QUICK	0.059	0.113	0.062	0.096
ROA	-0.423	0.044	-0.411	0.050
LOSS	0.244	0.007	0.251	0.006
ROA LOSS*	1.508	0.023	1.153	0.006
FORGN	0.217	0.000	0.221	0.000
BIIND	-0.313	0.008	-0.301	0.011
CEODUAL	0.140	0.009	0.138	0.010
OWNER	0.084	0.451	0.091	0.417
Year Dummies	Included		Included	
Industry Dummies	Included		Included	
R-square	0.460		0.462	
Adj. R-square	0.444		0.445	
F (p-value)	28.07 (0.000)		27.33 (0.000)	
Observations	1050		1050	

Notes: The dependent variable is AUDIT FEE, independent variable of this research is FAM, and AUDITOR CHOICE is used as a mediator variable. All the continuous variables are winsorized at 1% and 99%. All the p-values are two-tailed. See the Appendix for variable definitions.

4.4. Additional analysis

In addition, concerning the brand name reputation as chosen by IAO (the 'big' audit institute in Iran): prior researchers (Hogan & Jeter, 1999; Solomon, Shields, & Whittington, 1999; Mayhew & Wilkins, 2003; Dunn & Mayhew, 2004) document that auditors obtain specific knowledge about the different industries that differentiate them from their competitors. The earlier research by Dunn & Mayhew (2004) indicates that clients can get a benefit from specialist auditors services in a number of ways, including disclosure advice and enhanced audit quality, plus serving as a signaling mechanism of clients' high-quality disclosures. Whilst there are different ways to define specialization, according to Robin and Zhang (2015), we use the method followed in Casterella et al. (2004) and Dunn and Mayhew (2004): SPEC is an indicator variable equal to 1 if the client's audit firm audits at least 20 percent of the sales in the client's industry, and 0 otherwise. Our Table 6 results indicate that family firms in Iran are less expected to choose industry-specialist auditors.

Table 6. Regression results of family ownership and auditor choice (SPEC)

Model	Model 4			
Dependent Variable	AUDITOR CHOICE (SPEC)			
Variable	***Coeff.***	***Std. Err.***	***Z statistic***	***p-value***
Intercept	-5.361	0.659	-8.13	0.000
FAM	-0.352	0.106	-3.32	0.001
LTA	0.401	0.040	9.88	0.000
CHTA	-0.178	0.198	-0.90	0.368
ATURN	0.061	0.084	0.72	0.472
DA	0.701	0.493	1.42	0.155
CURR	0.466	0.275	1.70	0.090
QUICK	-0.073	0.077	-0.95	0.342
ROA	1.732	0.428	4.05	0.000
LOSS	0.464	0.180	2.57	0.010
ROA LOSS*	-1.686	1.334	-1.26	0.207
FORGN	0.153	0.098	1.56	0.118
BIIND	-0.404	0.239	1.69	0.091
CEODUAL	-0.081	0.108	-0.75	0.454
OWNER	-0.099	0.219	-0.45	0.650
Year Dummies	Included			
Industry Dummies	Included			
Pseudo R-square	0.145			
LR (p-value)	209.45 (0.000)			
Observations	1050			

Note: The dependent variable is AUDITOR CHOICE (SPEC) and the independent variable of this research is FAM. All the continuous variables are winsorized at 1% and 99%. All the p-values are two-tailed.

5. Conclusion

The paper investigates audit fees and choice in family firms in Iran. Theoretically, family firms are less prone to agency problems of type 1 (separation of ownership from control) as compared with non-family firms. Consequently, it is expected that family firms would show less demand for employing high quality auditors as monitoring agents to reduce agency problems of type 1 and as a result would pay a lower audit fee. In contrast, maintaining family interests may be preferred to the interests of minor shareholders (agency problem of type 2) due to the special ownership structure of family firms. Audit risk would thus increase: the auditor would need to expand their operating domain and the need for a 'high quality' auditor would increase. Hence a higher audit fee would be required.

This study spans 2007-2016 and demonstrates that family firms are less likely to hire the IAO (the 'big' audit firm in Iran). In other words, family firms show a lower demand for a higher quality audit. This finding is consistent with results of the research of Hu & Kang (2013) and Khan et al (2015). Additionally, our findings demonstrate that family firms pay higher audit fees than non-family firms. Globally speaking, our results provide differentiating evidence, instead of the mixed results stated by previous literature (Ho & Kang, 2013; Khan et al, 2015) about the association between family ownership and audit fees. Ho and Kang (2013) reported that family firms in the USA incurred lower audit fees. As Khan et al (2015) states,

‘the absence of … conditions in developing countries may lead to greater litigation risk and high fees for family firms in developing countries…’

Our results also show that auditor choice (IAO) reduces the relationship between family ownership and audit fee. Our results reveal that, in addition to the lower presence of the ‘big’ auditor in family firms, the audit fees are also lower. Since audit fees are a measure of auditing quality (PCAOB, 2015), it can be said that family firms are not keen to carry out high quality audits in Iran. In addition, the results of the additional analysis show that choosing industry specialist auditors is less likely in family firms and this confirms our previous findings in relation to the auditor choice in family firms in Iran. This finding contrasts with the results of Kang (2014) in the USA as previously noted.

The importance of this research is in the increased awareness for researchers and users about family ownership and of the selection of auditors and audit fees within the emerging market capitalization in Iran. However, this study suffers from some limitations, firstly, despite using a sensibly large sample. Secondly, our variables are related to direct ownership and not to ultimate ownership. Despite these limitations, the main aim of the current study is to expand our understanding of the complex association between ownership structure and audit fees.

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