Family ownership and financial reporting quality: Iranian evidence

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Abstract
Purpose – In the process of reporting accounting information, the auditor's objective is to detect possible misstatements and errors in accounting information. Audit evidence aids auditors in providing reasonable assurance about the quality of financial reporting. Studying the quality of family firms' financial reporting is of higher importance relative to non-family firms due to lower risk of accounting manipulation. Therefore, the purpose of this paper is to examine the relationship between family ownership structure and financial reporting quality from an auditing perspective.
Design/methodology/approach – To analyze the research hypotheses, the authors use a sample data consisted of 221 companies listed on the Tehran Stock Exchange (including 52 family and 169 non-family firms) over a five-year span from 2011 to 2015.
Findings – Using multivariate regression analysis of panel data, our results indicate that audit risk in family firms is lower than their counterparts. Likewise, the findings are indicative of lower audit fees paid by family firms as compared to non-family ones. The authors also find that auditors put more effort in family firms and thus audit effort is more significant for these kinds of firms.
Originality/value – The study focuses on family ownership and financial reporting quality in a developing country like Iran and the results of the study may be beneficial to other developing nations, as Iran stock market possesses some unique features which are not normally prevailing in other equity markets, even in the Middle East.
Keywords Audit fees, Family ownership, Reporting quality, Audit effort, Audit risk
Paper type Research paper

1. Introduction
According to Accounting Theory (Hendrickson, 1982), the primary goal of reporting is to offer useful information to those who are most interested in financial reports. Data derived from the accounting information system represents one of the most reliable resources at the disposal of users to make decisions about business entities. The ultimate outcome of accounting information systems is financial reporting. All users rely on these financial reports to assess business entities. If financial reporting is of standard quality, it will allow users to make accurate decisions. Major users of such information include investors, creditors, employees, customers, commercial creditors and government. These sound decisions will lead to systematic allocation of resources, which will have a significant impact on the optimum allocation of resources in the economy of a country (Tariverdi, 2007). In this respect, one of the determining factors that enhance the quality of information and reduce the information risk of corporate reports is provision of higher quality audit services.

Researchers argue that "higher quality audits" improve the credibility of the data given to users, especially investors and the opportunity to accurately analyze the financial status and performance of a company (Salehi *et al.*, 2017).

Society in its broad sense has always demanded quality audit services. The negligence and failure of auditors to provide high-quality audit services, as expected of them as specialists, has at all times been accompanied by a punitive response from the community. Auditors are being summoned to court, sentenced to pay heavy compensations and lose their social status, and even if not summoned to court, the society metes out a social punishment for them, for example, by charging them of having enormously large pockets (Volk, 2006). In this context, verifying evidence and declaring an opinion by auditors depend on audit effort, which is in turn a function of audit risk. An estimate of audit risk and audit fee is provided by an auditor at the time of reviewing financial statements in accordance with accepted auditing standards, which includes inherent risk, control risk and detection risk in the account balance, transaction group, related claims and disclosure level. In the inherent risk assessment, the auditor takes into account the integrity and competence of the management, unusual transactions, complex business arrangements, operational risk, and accounting practices. Similarly, the auditor, as part of risk control assessment, considers the effectiveness of the control, quality of information systems, internal audit function, risk monitoring strategy, identification of risk changes and response to management, risk control or reduction by management and board members (Ghosh and Tang, 2015). The detection risk represents the risk of failing to find a significant misstatement by the auditor. Where there is a gap between income and the cash flows due to management estimates and assumptions, auditors are required to modify their audit plan to detect high-risk accounts and increase audit fees proportional to their audit effort, i.e. more hours spent by auditors or getting assistance from specialists in the audit team (Bedard and Johnstone, 2004).

Family firms are less susceptible or prone to financial statements manipulation, primarily due to direct monitoring, greater managerial integration, lower operational risk, deeper business knowledge, and enhanced understanding of the relationship between business owner, customers and suppliers (Wang, 2006). In addition, accounting estimates and assumptions are less erroneous and subject to managerial manipulations as well as significant distortions. Therefore, auditors are likely to consider a lower risk in their audit planning. Auditors are also expected to charge lower (higher) fees from family firms (non-family firms) since they undertake fewer (more) substantive tests in order to provide a reasonable level of assurance. Based on previous discussions, an auditor's task is thus the quality assessment of financial reports and relevant disclosures to issue the final opinion (Ghosh and Tang, 2015).

The agency theory maintains that family firms may mitigate or intensify agency problems. According to this theory, on the one hand, there are incentives for family firms to maximize their personal interests and influence the financial reporting process and consequently give rise to agency costs. Higher agency costs, by itself, entail greater risk assessment, audit efforts and audit fees. Nevertheless, family ownership can reduce audit risk assessment and lower audit fees in order to reinforce internal monitoring and lessen conflicts of interest between corporate managers and owners (Khan and Subramaniam, 2012). On the other hand, when the quality of financial reporting is low and chances of financial statements manipulation are high, auditors spend more time on approving accruals of extraordinary items or simply going through risky accounts. If auditors assess the quality of their client's financial reporting low due to high inherent risk or control risk, the audit risk will be high, so normal auditing practices will not be able to reduce audit risk to a satisfactory level. In this case, auditors attempt to collect more audit evidence, undertake exhaustive tests and conduct more accurate fieldworks and audit efforts (Fan and Wong, 2002; Tong, 2007).

Audit standards require auditors to respond to audit risk by changing the nature, timing and extent of audit procedures, which will affect the planning and pricing of auditors (Houston *et al.*, 1999; Bedard and Johnstone, 2004). Generally, the decisions regarding the planning and pricing of audit are made by the senior members of the audit team, which is a function of the risk of owner firm (Bedard and Johnstone, 2004). Auditors also put more effort in questioning and challenging clients, which will inevitably postpone the completion of fieldwork (Hirst, 1994); consequently, when auditors dismiss a financial report as low-quality, auditing costs are expected to rise. Further, auditors may charge higher fees when using specialists in the audit team in an attempt to mitigate risk (Ghosh and Tang, 2015).

Given the importance of family firms, growing attention has been paid to these firms. Shareholders, potential investors, creditors and other beneficiaries obtain information about their respective companies. Considering the above, and the fact that there are hosts of family listed on Tehran Stock Exchange (hereafter, TSE), it seems necessary to undertake a research into the impact of family and non-family firms on the quality of financial reporting from the auditors' perspective. In addition to offering a new perspective to financial reporting research, it provides necessary ground in the capital market for users of financial statements.

In the present paper, our conjecture lies in the fact that auditors of family firms charge lower audit fees as a result of lower audit effort. In other words, one or combination of characteristics of family owned companies such as high quality financial reporting as a function of lower risk of accounting system assessment, the state of being less prone to financial manipulation, tendency not to withhold bad news, and enhanced compulsory disclosures (e.g. financial statement notes) provided us with an incentive to conjecture that lower audit effort in family firms due to previously mentioned items leads to lower audit fees. It is also arguable that retaining similar disclosure and reporting qualities in both family and non-family firms is likely to affect audit fees significantly. Understanding how auditors evaluate the quality of financial reporting in family and non-family firms is likely to give conclusive evidence on whether financial reporting quality is systematically different between the two groups.

The present paper contributes and deviates from exiting approach in current line of research on accounting and auditing literature in a number of ways. First, most previous studies conducted on financial reporting quality have utilized accrual-based models and ignored higher explanatory power of audit-based models which are typically well-specified with higher R^2 and lower risks of correlated variables. Second, firm performance is the major concern in prior literature on financial reporting quality as it is highly correlated with financial reporting quality. However, from auditing perspective, performance of the firm is not as critical, particularly when the client is larger in size and highly profitable. Finally, accrual-based models of financial reporting quality are solely dependent on the information on accruals while audit-based models incorporate information from financial statements and notes thereto.

The reminder of the present paper is organized as follows. In the following section, we frame the study into the theoretical backgrounds of family ownership and financial reporting quality and provide a succinct review of institutional background in Iran. Section 3 provides the literature review and hypotheses development process. The methodology used to gather evidence in order to test research hypotheses are then presented in Section 4. It also details the sample selection procedure. Section 5 discusses the main empirical results. Finally, Section 6 concludes this research by highlighting its main implications.

2. Theoretical foundations and institutional background
Investors pour their wealth into a firm in a variety of manners such as labor, capital, raw materials, and management. They expect to receive reasonable returns based on the amount of investment and risk-taking. Understandably, corporate executives utilize these economic

resources in the production process and earn revenues by selling their products. Now, the question is: to whom this income belongs? And what is the share of each stakeholder from this income? There is no doubt that these revenues belong to those who have made their fortunes available to the company. According to the theory of property rights, corporate income is divided based on the characteristics of property rights. Shareholders are the last group to benefit from this revenue, making claim relative to assets and cash flows of the company. Obviously, in a competitive market, the returns of all shareholders who have invested their wealth in the firm in a variety of ways will reach a state of equilibrium (Furubotn and Pejovich, 1972).

Financial information, in general, and accounting information, in particular, is a determining factor for all quoted firms in both equity and debt markets, especially when they witness a fierce competition with other market participants to acquire necessary resources. In this regard, the quality of the information is of highest importance as it brings about several advantages and inevitable consequences for the market participants such as better transparency, favorable contracting terms, lower asymmetric information and lessened conflicts of interests between agents and principals (Watts and Zimmerman, 1986; Hutton, 2007; Tong, 2007). Prior accounting literature has placed emphasis on higher quality accounting information or financial statements as it provides users with more reliable and useful information, particularly for decision making processes (Francis *et al.*, 2004; Villalonga and Amit, 2006). In addition to above advantages, previous studies also document some market-specific benefits, namely reduced cost of capital and heightened stock liquidity (Schipper and Vincent, 2003; Francis *et al.*, 2005). This, by itself, justifies the attractiveness of stocks in the eyes of outsiders. In general, three essential enquiries are taken into consideration when we are referring to the quality of financial information: how informative are the reported numbers and figures; how sufficient or comprehensive is the financial disclosure, and do the reported numbers comply with generally accepted accounting principles. Of all the factors, more informative financial numbers are typically regarded as highly important (Schipper and Vincent, 2003; Tong, 2007).

A family business may sometimes go beyond a family firm. In the definition of this type of business, three factors are included: family, ownership, and management. The convergence of family factor and only one of two factors of ownership or management (family and ownership of a business, or family and management of a business) can define a family business. Family business is one of the most traditional socioeconomic institutions to have been recognized so far. Similar to other places of the world, Iranian family firms have come into vogue almost recently. Such companies account for almost 60–93 percent of the European, 95 percent of American, and 65 percent of Central and South American firm (Tong, 2007; Ghosh and Tang, 2015).

Agency conflicts between family owners and managers or between family owners and other minority shareholders are prevailing in family owned firms. Accordingly, this kind of ownership structure can be seen from two opposing viewpoints. On the one hand, founding family owners are able to exert significant influence and control over managers and prevent any managerial misbehavior or expropriation. On the other hand, their superiority and significant control over major shareholders is likely to facilitate private misconduct (Fan and Wong, 2002; Tong, 2007). To be more specific, family firms tend to employ a long-term investment approach which is likely to prevent family owners from involvement in any disvaluing behavior. Indeed, family owners have a tendency to persuade investors and outsiders into purchasing non-controlling interests and fulfill their accountability role by preparing high quality financial information (Anderson and Reeb, 2003; Tong, 2007). Family owners are also capable of mitigating managerial opportunistic behavior and financial manipulation by effectively monitoring professional managers (Demsetz and Lehn, 1985;

Weber *et al.*, 2003; Tong, 2007). In other words, significant influence and financial share of family owners enable them to lessen the possibility of management short-sightedness and consequently hold the managements accountable for their actions. Taken together, all these policies result in higher quality financial reporting practices in family owned firms (Weber *et al.*, 2003; Tong, 2007).

Nevertheless, some studies argue that concentrated ownerships like family and institutional ownerships are associated with lower reporting discretion and earnings which are not informative enough. More specifically, family owners are prone to get involve in self-interest affairs and conducting non-profit maximizing objectives (Faccio *et al.*, 2001; Fan and Wong, 2002; Anderson *et al.*, 2003). Furthermore, less effective or less prevalent corporate governance practices as well as lower unaffiliated block-holder ownership in family firms compared to non-family firms are noted in prior literature, suggesting the lack of external body to control the actions of family owners (Barclay and Holderness, 1989; Shivdasani, 1993; Tong, 2007).

In Iran, the definition of the family firm is based on the considerable influence of the members. The Iranian Accounting Standards Committee in its Clause 8 of the Accounting Standard No. 20, for instance, specifies that shareholders with a minimum of 20 percent voting rights exert a significant influence over their investee. Furthermore, under article 107 of the Iran Trade Law (ITL), all publicly held companies are required to form a board of directors including a minimum number of five shareholders. Hence, it can be concluded that shareholders with as little as 20 percent corporate ownership can push for their own seats on the board or enact changes at shareholder meetings (Khajavi *et al.*, 2012). Collectively, possessing a minimum of 20 percent of firm stocks by the family members is one of the conditions of family firms. In addition, the membership of family members in the board and the controlling of the firm are two other criteria of establishing family firms.

The present study uses a special sample data collected from a transition market in which the socio-economic, political and cultural factors are significantly different from those prevailing in developed markets. This provides new insights into the relationship between financial reporting quality and family ownership. What follows is a summary of some related characteristics of the Iranian immature market (Salehi *et al.*, 2017):

(1) In the light of the Iranian Government's five-year privatization plans, the ownership structure of listed companies on the TSE has changed dramatically since 2000. In other words, the substantial transfer of ownership structure from government sector to the private sector has led to a more diffuse ownership structure in companies listed on the TSE (Davani, 2003; Bagherpour *et al.*, 2014; Salehi *et al.*, 2017).

(2) The Iran Audit Organization (IAO) had been playing a monopolistic role in the audit market of Iran prior to the establishment of the Iranian Association of Certified Public Accountants (IACPA) in 2001. The IACPA certified a considerable number of private audit firms subsequently and diversified the Iranian audit market. Nonetheless, dynamic market share of audit firms (newcomers, restructures and mergers) and the Government's persistent involvement within the corporate governance structure of listed companies have made the plan ineffective, or, at least (Mashayekhi and Mashayekh, 2008; Bagherpour *et al.*, 2014; Salehi *et al.*, 2017).

(3) The concept of "litigation risk" is not applicable to the audit market of Iran as Iranian auditors are only charged with criminal rules prescribed by the ITL (Salehi *et al.*, 2017).

(4) The activity of BIG international audit firms in Iran is prohibited due to some political issues and, as a result, the IAO is considered as a benchmark for other private audit firms. Further, this phenomenon has led to less pronounced effects of auditor reputation in the Iranian audit market (Salehi *et al.*, 2017).

(5) The lack of an official procedure or at least a consensual benchmark for auditors' remuneration, the presence of large religious foundations called Bonyad whose combined budgets represent more than 30 percent of central government spending and the considerable involvement of petrochemical industry are also among other noteworthy features of the TSE setting (Salehi *et al.*, 2017).

3. Literature review and hypothesis development

3.1 Role of management and ownership in family business

Family firms comprise two cornerstones of "business" and "family." This combination creates a synergy between the so-called factors, which doubles the significance of the issue. The proper management in each of these cornerstones would directly affect the other and this causes the formation of a new concept for family firm management. The owners of such firms, in addition to managerial and entrepreneurship skills, should benefit from life skills including communications at a high level. Running a successful family firm, besides generating income for family members, improves the relations among members and lowers the social issues of such families.

In family firms, a large portion of shares are generally owned by one or more major shareholders from a family and family members are assigned to executive and operational positions. If the share of managers exceeds a threshold, they may be persuaded to provide a more desirable financial and performance statement. Moreover, major shareholders can also affect decisions and activities of the firm through controlling the conduct of managers (Mehrazin *et al.*, 2013). Given the specific ownership structure of family firms, the preservation of family interests takes precedence over protecting the interests of shareholders, and since shareholders are less likely to have access to the essential corporate information, there is always a risk of conflict of interests, especially in the long run (Abdolmohammadi and Kvall., 2010). Companies, institutions, and firms which are under the influence of family relations and interactions are (Ali *et al.*, 2007):

- businesses which are belonged to the family members and run by them or their employees;
- large and multinational businesses operating by several local families; and
- mutual businesses among some non-family partners, majority of whom are sons, daughters and/or other family members.

3.2 Family ownership and financial reporting

Family firms are generally characterized by a structure of ownership, management and control directed by a family member. A family firm is often distinguished by a sole ownership of family members, but there is little known about such firms and the choice of financial reporting in this particular form of companies. Nevertheless, a study of different aspects of financial reporting of family firms can aid shareholders, investors and creditors in making sound investment decisions (Salvato *et al.*, 2008). It is fairly straightforward to identify an accounting entity, but this raises the question of whether such an entity likely to adapt when it comes to a family with controlling power? In this regard, two official perspectives were raised by Salvato *et al.* (2008):

(1) the founding family or the dominant family, who is chiefly interested in the long-term survival of the firm and concerned about the family and firm's reputation, and also possesses greater supervisory powers over executives is at place, mainly due to higher quality of accounting, planning and auditing in the family firms; and

(2) the efforts made to mislead other stakeholders about the financial performance of the firm and also conceal the wealth of founders or the dominant family is due to lower quality of accounting, planning and auditing.

Accounting evidence on the relationship between ownership structures and financial reporting quality is typically focused on one or more aspects of ownership structures. Wang (2006), for instance, examines the relationship between founding family ownership and earnings quality using data from the Standard & Poor's 500 companies and concludes that family owned firms demonstrate higher quality earnings and lower abnormal accruals. He also documents that the earnings reported by family owned companies is more informative than their counterparts and contains less transitory components. Similarly, Namazi and Mohammadi (2010) examine the relationship between earnings quality and stock returns in a sample of 39 family and 79 non-family firms listed on the TSE. The results of their study indicate that there is not any significant relationship between earnings quality based on the ratio of operating cash flow to net income as well as the standard deviation of operating income to standard deviation of operating cash flow in family and non-family firms. Rahimian *et al.* (2011) also report that firms with higher levels of institutional ownership indicate higher audit quality, while institutionalized ownership concentration tend to impair the audit quality. The authors use audit firm size, auditor's specialization and audit opinion as proxies for audit quality.

To our knowledge, a narrow line of research, to date, has examined the quality of financial reporting or disclosure. However, the evidence on family ownership structures is still lacking and inconclusive as the results are somewhat mixed and controversial. Hutton (2007) argues that the research on family ownerships is still in its early stage as he found a spurious relationship between family ownership and disclosure quality. Based on his findings, family owned firms are likely to have better performance whilst well-performed firms tend to have high quality financial disclosure. Ali *et al.* (2007) and Chen *et al.* (2008) provide some contrasting evidence on financial reporting and disclosure quality. Specifically, while Ali *et al.* (2007) indicate higher quality of financial reporting and disclosure, Chen *et al.* (2008) assert that the financial disclosure of family owned firms is not transparent enough and lacks the transparency factor. The latter suggests that family firms report more earnings warnings and fewer earnings forecast, probably due to the fact that family owner have greater litigation and reputation cost concerns. In stark contrast to Chen *et al.* (2008), the study of Mengoli *et al.* (2017) indicates that family ownership and institutional environments of a sample of 12 European countries have a substitute effect on the quality of financial reporting. In other words, their contribution lies in the fact that better formal institutions are more likely to affect the earnings quality of non-family firms more favorably. A few studies also document that family and non-family firms' valuations are significantly different and attribute this difference to information risk along with the variations in financial reporting quality (e.g. Anderson *et al.*, 2003; Villalonga and Amit, 2006; Ghosh and Tang, 2015). Indeed, prior literature on the relationship between firm valuation and ownership structure contends that information asymmetry and information precision are less and more pronounced for family firms, respectively (Easley and O'Hara, 2004; Villalonga and Amit, 2006; Lambert *et al.*, 2007).

Prior auditing literature demonstrates that financial reporting quality is significantly associated with different auditing factors such as audit pricing, audit effort and audit risk (Hirst, 1994; Gul *et al.*, 2003; Bedard and Johnstone, 2004; Ghosh and Tang, 2015). The general conjecture is that auditors spend more time on the audit engagement for clients whose financial statements are of poor quality and thus the risk of financial misstatement is considered high. In this respect, when auditors consider financial reporting as low quality, they, consequently, raise the level of audit risk and charge higher

audit fees as well. They also consider the use of specialized personnel on the audit team in order to reduce audit risk, which, *per se*, leads to higher audit fees (Bedard and Johnstone, 2004; Ghosh and Tang, 2015).

Ebrahimi *et al.* (2014) examine ownership structure impact on audit fees and independent auditors' opinion in companies listed on the TSE. Using multivariate regression of integrated data for 69 companies during the period of 2006–2011, they report that the ownership of institutional investors has a significant and positive effect on audit fees. Their results also suggest a significant and negative relationship between institutional ownership and qualified audit opinions. Bedard and Johnstone (2004) provide some evidence on earnings manipulation as a corporate governance risk and its significant and positive relationship with audit effort and remuneration. Likewise, Leventis and Dimitropoulos (2010) indicate that earnings management causes higher audit fees, particularly in small-sized companies in Athens. Alali (2011) tests the linkage between audit fees and discretionary accruals during 2000–2006 and find that there is a positive and significant relationship between discretionary accruals and audit fees. Moreover, his study shows that firm profitability negatively affects audit fees. Specifically, his findings suggest that companies operating in an insecure financial situation (losing money) are likely to pay higher audit fees due to the higher risk of the company as a result of its poor profitability.

The Australian evidence of Khan and Subramaniam (2012) investigates how family ownership is related to audit fees and auditor choice. According to their results, family firms pay higher audit fees than do non-family firms. Their results also reveal that, compared with non-family firms, family firms are more likely to work with BIG auditing firms. In a similar vein, He (2010) examines family ownership impact on auditor choice, audit fees and internal governance and concludes that in firms with strong internal governance, clients would be more likely to choose the most qualified auditors. Furthermore, he shows that the positive relationship between family ownership and the expert auditor choice is strengthened by strong internal mechanisms and the negative relationship between family ownership and audit fees is eliminated in the presence of strong governance. Collecting data from the S&P 1,500 firms, Kang (2012) investigates how ownership structure of family firms and agency issues affect the choice of expert industrial auditors and audit fees. The findings suggest that family firms are more likely to choose expert auditors and also pay lower audit fees than do non-family firms. Ghosh and Tang (2015) examine auditor's assessment of the quality of financial reporting by analyzing the audit fee and audit risk in family and non-family firms in 2000 US industrial companies from 2001 to 2010. The results revealed that auditors charge less fees from family firms compared to non-family firms and this gap is diminished when family firms entail high audit risk. The authors also report that audit risk and audit effort in family firms are less risky than non-family firms.

Based on the preceding discussions in the theoretical foundations and literature review, we expect a significant relationship between family ownership and audit related factors, namely audit risk, audit effort and audit fees. Accordingly, we present our hypotheses as follows:

H1. There is a significant relationship between family ownership and audit risk.

H2. There is a significant relationship between family ownership and audit fees.

H3. There is a significant relationship between family ownership and audit effort.

4. Research methodology
4.1 Research model and statistical sample
Given the nature and content of the study, we use regression analysis to test our hypotheses. Drawing on the secondary data extracted from the financial statements of companies listed on the TSE, the relationship between variables is analyzed. This is a descriptive research

that adopts an *ex post* facto design for the analysis of past data (corporate financial statements). The total number of 460 companies is listed on the TSE during 2011–2015, from which we choose a sample of 221 companies consisting of 52 family firms and 169 non-family firms. Our sample is about 48 percent of the statistical population which seems a logical percentage.

Following Ghosh and Tang (2015), the empirical models used in the present research are described as below:

$$TCA = \beta_0 + \beta_1 Family\text{-}firm + \beta_2 Size + \beta_3 Currentassets\text{-}to\text{-}currentliabilities$$
$$+ \beta_4 Inventory + \beta_5 Return\ on\text{-}assets + \beta_6 Loss + \beta_7 Audit\text{-}opinion$$
$$+ \beta_8 Audit\text{-}tenure + \beta_9 Auditspecialization + \beta_{10} Leverage$$
$$+ \beta_{11} Currentassets\text{-}to\text{-}totalassets + \beta_{12} Growth + \beta_{13} Market\text{-}to\text{-}book$$
$$+ \beta_{14} Busy\text{-}season + \beta_{15} Auditor\text{-}change + \varepsilon. \tag{1}$$

We use an accrual-based measure for audit risk in model (1) as the dependent variable. The variable of interest in this model is Family-firm and its coefficient (β_1). We expect β_1 to be negative if audit risk is lower for family firms:

$$Audit\ fees = \beta 0 + \beta_1 Family\text{-}firm + \beta_2 Size + \beta_3 Currentassets\text{-}to\text{-}currentliabilities$$
$$+ \beta_4 Inventory + \beta_5 Return\text{-}on\text{-}assets + \beta_6 Loss + \beta_7 Audit\text{-}opinion$$
$$+ \beta_8 Audit\text{-}tenure + \beta_9 Audit\ specialization + \beta_{10} Leverage$$
$$+ \beta_{11} Currentassets\text{-}to\text{-}totalassets + \beta_{12} Growth + \beta_{13} Market\text{-}to\text{-}book$$
$$+ \beta_{14} Busy\text{-}season + \beta_{15} Auditor\text{-}change + \beta_{16} Financing$$
$$+ \beta_{17} Cash\text{-}flow + \beta_{18} Beta + \varepsilon. \tag{2}$$

In model (2), the dependent variable is audit fees charged by auditors and our main variable of interest is again Family-firm. The coefficient on Family-firm (β_1) is expected to be negative if audit fees in family firms are lower due to higher quality of financial information:

$$Report\ time = \beta_0 + \beta_1 Family\text{-}firm + \beta_2 Size + \beta_3 Abnormal\text{-}accruals$$
$$+ \beta_4 Return\text{-}on\text{-}assets + \beta_5 Leverage + \beta_6 Auditor\text{-}change$$
$$+ \beta_7 Busy\text{-}season + \varepsilon. \tag{3}$$

Report time as the dependent variable of model (3) represents audit effort. The coefficient on Family-firm (β_1) is expected to be negative in order to fulfill our primary expectation regarding lower audit efforts in family firms as a result of higher reporting quality.

4.2 Dependent variables
The quality of financial reporting from the auditor's perspective consists of three criteria of audit fee, audit risk and audit effort, each of which is described in details below. For the audit risk criterion, we use the modified model of Dechow and Dichev (2002) to measure the quality of accruals:

$$TCA_{i,t} = \beta_0 + \beta_1 CFO_{i,t-1} + \beta_2 CFO_{i,t} + \beta_3 CFO_{i,t+1} + \beta_4 \Delta REV_{i,t} + \beta_5 PPE_{i,t} + U_i \tag{4}$$

where $TCA_{i,t}$ is the sum of current accrual items for firm i in year t, which is measured using the following equation:

$$TCA_{i,t} = OL_{i,t}\text{-}CFO_{i,t}.$$

$CFO_{i,t}$ is the Operating cash flow of firm i in year t; $\Delta REV_{i,t}$ the changes in net sales during year t and $t-1$ for firm i; $PPE_{i,t}$ the net value of tangible fixed assets of firm i in year t; U_{it} the estimated error (remainder of the regression); Ol_{it} the operating income of firm i in year t.

All variables in Equation (4) are deflated by the sum of assets to ensure homogeneity. U_{it} is the residual of the model, which is a proxy for the quality of accruals. Due to its inherent characteristics, the quality of accruals can be regarded as a substitute for audit risk. The residuals of the model indicate the degree to which accruals have been mapped to cash flows. Residuals are likely to result in management bias which raises the probability of major manipulations in the financial statements and thus leads to higher audit risk (Francis *et al.*, 2005).

The second dependent variable in this study is the audit fee, which is calculated as the logarithmic transformation of the total fees charged by the auditor. The third dependent variable is audit report lag; therefore, if auditors are supposed to charge lower fees due to reduced audit risk, they need to undertake less audit tests. Using audit report lag (the number of days between the end of the fiscal year and the issuance date of the audit report) as a proxy for the audit effort in the third model indicates the need for fewer substantive tests to provide the reasonable level of assurance to the users of audit report. Given the fact that few substantive tests are required to reach a reasonable level of assurance, less audit effort is needed and thus auditors charge less fees from family firms. Previous studies suggest that greater auditor's effort would delay the issuance of audit reports, thus in this study audit report lag is used as an indicator of audit effort. When higher audit effort is required, auditors are expected to spend more time and charge higher fees (Knechel and Payne, 2001).

4.3 Independent variables
The present paper employs the Daxplus Family Index along with a review of previous studies to identify family firms. In this respect, the term "family firm" is used to refer to companies in which at least 20 percent of shares are owned by a family or their relatives, or when two family members or a relative sit on the board of directors and hold a minimum of 5 percent of the common stocks.

4.4 Control variables
Following Ali *et al.* (2007) and Ghosh and Tang (2015), we use a set of control variables in our regression models to control auditor and client related effects. Table I describes these variables in detail.

Discretionary accrual as a control variable is also included in the model (3) and calculated by using the modified Jones model as follows:

$$TA_{it} = E_{it} - OCF_{it}, \tag{5}$$

where TA_{it} is the total accruals of the firm i in year t; $E_{it} =$ Income before unrealized items for firm i in year t; $OCF =$ cash flows from operations for firm i in year t.

After calculating total accruals, the α_1, α_2, α_3 parameters are computed using the following equation:

$$\frac{TA_{it}}{A_{it-1}} = \alpha \frac{1}{A_{it-1}} + \alpha_2 \frac{\Delta REV}{A_{it-1}} + \alpha_3 \frac{PPE_t}{A_{it-1}} + \varepsilon, \tag{6}$$

where TA_{it} is the total accruals of the firm i in year t; A_i, $t-1$ is the total book value of the firm's assets at the end of year $t-1$; $\Delta REV_{i,t}$ the change in sale revenues of the firm i between years t and $t-1$; PPE_i the net value of plan, properties and equipment of firm i in year t; ε_{it} the error terms of random factors; α_1, α_2, α_3 the estimated parameters of firm i.

Control variable	Description
Size	Natural logarithm of total assets
Current assets-to-current liabilities	Ratio of current assets to current liabilities
Inventory	Ratio of inventory to total assets
Return-on-assets	Ratio of operating income to total assets
Loss	An indicator variable equals to 1 if the firm reports loss and 0 otherwise
Audit-opinion	An indicator value taking value of 1 if auditors' opinion is qualified and 0 otherwise
Auditor-tenure	The length of the audit engagement
Auditor-specialization	Auditor's market share; Total assets of client i in industry k deflated by the total assets of all the clients in the industry k, this measurement has been used by Palmrose (1986) and Reichelt and Wang (2010)
Leverage	Ratio of total liabilities to total assets
Current assets-to-total assets	Ratio of current assets to total assets
Growth	The changes in revenues between the current and previous year;
Market-to-book	Ratio of market value of common equity to book value of total assets
Busy-season	An indicator value taking the value of 1 if the client's end of fiscal year is in March and 0 otherwise
Auditor-change	An indicator value taking the value of 1 if the client engages a new auditor and 0 otherwise
Financing	An indicator value equals to 1 if there is an initial public offering (IPO) and 0 otherwise
Cash-flow	Cash generated from operations that is extracted from cash flow statement
Beta	Systematic risk which is obtained from the TSE library and its supplementary software known as "Rahavard Novin"

Table I.
Control variables used in the regression models

After calculating α_1, α_2, α_3 parameters using the least squares method, the discretionary accruals are determined using the following equation:

$$NDA_{it} = \alpha_1 \frac{1}{A_{it-1}} + \alpha_2 \frac{\Delta REV_{it} - \Delta REC_{it}}{A_{it-1}} + \alpha_3 \frac{PPE_{it}}{A_{it-1}}, \tag{7}$$

where NDA_{it} is the non-discretionary accruals of firm i in year t; $\Delta REC_{i,t}$ the change in accounts receivable of firm i between years t and $t-1$. report time indicates the number of days between the end of the fiscal year and the date of the auditor's signature.

5. Research findings

5.1 Descriptive statistics

Table II presents the descriptive statistics of variables used in the regression models. As it is evident in panel (A), we present the mean values for the full sample (221 firms), the family subsample (52 firms) and the non-family sample (169 firms). We also report the frequency distribution of family firms in panel (B). Our variables of interest in this table are audit fees, audit effort and quality of accruals items (audit risk). For the full sample, the mean audit fees are 8.82 ($183.000). The mean value of audit fees for the family and non-family subsamples are 8.05 ($174.000) and 9.11 ($196.000), respectively. Unreported numbers indicate that the difference in audit fees between family and non-family subsamples is statistically significant.

The average audit report lag as a proxy for audit effort is about 94 days for the full sample. This mean value is approximately 91 days for the family subsample and about 100 days for the non-family subsample, supporting our primary expectation on lower audit effort for family firms. Unreported value for the difference of subsamples is again statistically significant. The variable capturing audit risk, quality of accrual items, is −0.02

Panel A: descriptive statistics

	Full sample					Family	Non-family
Variable	Mean	Median	SD	Max.	Min.	Mean	Mean
Quality of accrual items	−0.02	−0.02	0.12	0.44	−0.36	−0.035	0.00
Size	6.04	6.01	0.66	7.67	6.56	5.95	6.85
Current assets to current liabilities	1.35	1.19	0.83	6.85	0.10	1.27	1.45
Inventory to total assets	0.21	0.20	0.14	0.80	0.002	0.22	0.19
Return on assets	0.12	0.11	0.14	0.61	−0.24	0.11	0.14
Financial leverage	0.66	0.66	0.27	1.93	0.13	0.62	0.71
Income growth	0.17	0.14	0.36	1.71	−1.3	0.15	0.21
Market-book value	1.21	0.95	1.05	7.23	0.03	1.18	1.27
Audit fees	8.82	8.78	0.34	9.65	7.99	8.05	9.11
Systematic risk (β)	0.75	0.56	1.35	9.68	−3.42	0.68	0.80
Audit effort	94.86	101	32.55	284	23	91.45	99.81
Non-discretionary accruals	1.12	0.86	1.01	5.69	−0.006	1.09	1.25
Auditor tenure	1.67	1	0.90	5	1	1.65	1.56

Panel B: frequency distribution of family firms

Type of ownership	No	Relative frequency %	Cumulative frequency %
Family firm	52	23.53	23.53
Non-family firm	169	76.47	10,000

Table II.
Descriptive
statistics of variables
used in the study

on average for the full sample. The corresponding numbers for family and non-family subsamples are −0.36 and 0.00, respectively. The difference is statistically significant at margin of error of 0.05. The mean value on size for the full sample is 6.04 and the corresponding numbers for family and non-family sub samples are 5.95 and 6.85, respectively. As the difference of the preceding numbers is statistically significant, it can be argued that, relative to family firms, non-family firms are larger in size. Overall, all the differences of variables shown in Table II are statistically significant except for inventory to total assets as well as auditor tenure.

5.2 Goodness of fit or specification tests in panel data models
The present study uses panel data approach in order to test research hypotheses. In this respect, we conduct several diagnostic tests to determine which estimator estimates our regression models well. What follows is a summary of these tests. Table III reports the results of *F*-Limer test. The results indicate that pooling model is not an appropriate estimator for the second and third regression models as the significance value (0.000) is less than what is desired (0.05). In sharp contrast, the probability value of the first model suggests that panel data model is more appropriate to be used as an estimator.

Based on the results of *F*-Limer test shown in Table III, the appropriate model for estimating the first model is panel data. Therefore, it is required to select the best estimator between fixed effects and random effects for this model. In this regard, we use Hausman test to choose the appropriate estimator. The results of this test are reported in Table IV. Since the *p*-value of this model is greater than the margin of error of 0.05, we choose fixed effects model as the desirable estimator for estimating the first regression model.

Regression model	*F*-statistic	Sig.	Result
1	1.04	0.010	Null hypothesis (Pooling model) is confirmed
2	3.7	0.000	Null hypothesis (Pooling model) is rejected
3	3.85	0.000	Null hypothesis (Pooling model) is rejected

Table III.
Results of
F-Limer test

5.3 Estimation results

5.3.1 First hypothesis testing (family ownership and audit risk). Given the results of specification tests and heterogeneity of variance analysis for the research models as well as determination of appropriate estimators, we estimate each regression models.

Table V reports the estimation results of the first hypothesis for the full sample, assuming that the factor loadings on the control variables are stationary across family and non-family subsamples. The probability value of F-statistics $(0.00 < 0.05)$ indicates the general significance of the total model, and the Durbin-Watson statistic (1.53) confirms the lack of auto-correlation between the components of the disturbance. The R squared and the adjusted R squared values of the model are 78 and 77 percent, respectively. Therefore, it can be concluded that in the regression equation, about 77 percent of the dependent variable changes is explained by the independent and control variables.

Under first hypothesis, we attempt to examine whether audit risk varies between family and non-family firms. In this respect, we have used an accrual-based proxy for audit risk based on the modified Dechow and Dichev (2002) model. Panel (A) of Table V reports the estimation results from using the full sample. The coefficient on Family-ownership is negative and significant $(C = -0.014; P = 0.001)$. This provides

Regression model	F-statistic	Sig.	Result	
1	21.85	0.23	Null hypothesis (fixed effects) is confirmed	**Table IV.** Results of Hausman's test

Panel A: estimation results

Variable	Coefficient	t-statistic	Sig.
Family ownership	−0.014	3.22	0.001***
Current asset to current liabilities	0.010	3.785	0.000***
Inventory to total assets	−0.085	−13.68	0.000***
Firm size	0.010	3.444	0.000***
Return on assets	0.710	58.601	0.000***
Auditor's opinion	−0.001	−0.417	0.676
Auditor's tenure	0.009	4.235	0.000***
Auditor's industry specialization	−0.002	−0.404	0.686
Financial Leverage	−0.014	−2.165	0.030**
Current assets to total assets	0.074	18.231	0.000***
Company's growth	−0.095	−17.526	0.000***
Market-book value	−0.009	−11.765	0.000***
End of fiscal year (March)	−0.006	−1.065	0.287
Auditor's change	0.018	2.954	0.003***
Y-intercept	−0.153	−6.175	0.000***
R^2		0.78	
Adjusted R^2		0.77	
F-statistic		17.030	
Sig.		0.000	
Durbin-Watson statistic		1.53	

Panel B: mean differences

	Levine test			t-test			
Variable	F	Sig.		t	df	Sig.	
Quality of accruals	4.04	0.04		4.26	1,102	0.000	**Table V.** Results of the first hypothesis testing (family ownership and audit risk)
				4.34	439.94	0.000	

Notes: *,**,***Significant at 10, 5 and 1 percent levels, respectively

consistent evidence with our hypothesis. In other words, it can be argued that audit risk is lower for family firms as compared with their counterparts, probably because the residuals of the accrual model give rise to audit risk in the form of misstatements, omissions or earnings management. Furthermore, the estimation results for the control variables are in line with those reported in prior studies. Specifically, audit risk is higher for firms that are larger, have more return on assets, have higher ratio of current assets to total assets or current liabilities and experience auditor change. By contrast, audit risk is lower for firms which receive the audit services from specialized auditors or which receive qualified audit opinion. Not surprisingly, audit risk is also lower for firms which are growing further.

5.3.2 Second hypothesis testing (family ownership and audit fees). Table VI presents the estimation results of the second hypothesis respecting the significant relationship between family ownership and audit fees. As it is obvious, our variable of interest, family ownership, indicates a negative and significant coefficient ($C = -0.090$; $P = 0.014$), suggesting that audit fees paid by family firms are lower than non-family firms. This finding is in line with the second hypothesis and that of prior studies (e.g. Chen *et al.* 2008; Kang, 2012; Ghosh and Tang, 2015).

The F statistic of the overall model is significant at 0.05 of margin of error, and the Durbin-Watson's statistic (1.56) implies lack of auto-correlation between the components of

Panel A: estimation results

Variable	Coefficient	*t*-statistic	Sig.
Family ownership	−0.090	−2.469	0.014**
Size	0.062	2.444	0.015**
Current asset to current liabilities	−0.073	−3.937	0.000***
Inventory to total assets	−0.333	−2.299	0.022**
Return on assets	0.244	1.462	0.144
Loss	0.051	1,435	0.152
Auditor's opinion	0.034	1.221	0.222
Auditor's tenure	0.032	1.055	0.315
Auditor's industry specialization	−0.118	−4.033	0.000***
Leverage	−0.128	−1.012	0.312
Current assets to total assets	0.428	2.922	0.003***
Growth	0.002	0.257	0.720
Market-book value	0.015	0.844	0.399
End of fiscal year (March)	0.104	2.830	0.004***
Auditor's change	−0.048	−0.757	0.449
Initial public offering	0.681	3.678	0.000***
Operating cash flow	−8.593	−1.691	0.091*
Systematic risk (β)	−0.000	−0.610	0.542
Y-intercept	8.207	31.768	0.000***
R^2		0.12	
Adjusted R^2		0.08	
F-statistic		2.736	
Sig.		0.000	
Durbin-Watson statistic		1.56	

Panel B: mean differences

	Levine test			*t*-test		
Variable	*F*	Sig.		*t*	df	Sig.
Audit fees	0.077	0.782		−3.45	674	0.001
				−3.80	24.094	240.94

Notes: *,**,***Significant at 10, 5 and 1 percent levels, respectively

the disturbance. The coefficient of determination and modified coefficient of determination in the second model are also 12 and 8 percent, respectively. Therefore, it can be concluded that in the regression equation, about 12 percent of variations in the dependent variable is explained by independent and control variables.

The estimation results on control variables are somewhat similar to those of the first model and prior literature. For instance, more operating cash flows, systematic risk, auditor changes and financial leverage are negatively associated with audit fees. By contrast, larger clients, growing clients and qualified audit opinions raise the level of audit fees.

5.3.3 Third hypothesis testing (family ownership and audit effort). Under third hypothesis, we conjecture that audit report lag as a measure for audit effort is significantly and negatively associated with family ownership. In other words, relative to non-family firms, audit effort in family firms is lower due to higher quality financial reporting. As it is shown in Table VII, the coefficient (30.359) and *p*-value (0.000) of family ownership suggests that our hypothesis is supported. Other control variables in the model indicate plausible frequencies.

Taken together, our findings suggest that auditors of family firms are likely to put less effort into auditing practice. Which, by itself, is a consequence of lower level of audit risk. In other words, family firms are more prone to prepare high quality financial reports and lead audit firms into determining lower level of audit risk. Finally, when the level of audit risk is considered lower than average, auditors are likely to charge lower audit fees from family firms.

We argue that a combination of several factors in family firms is likely to contribute to the above-mentioned conclusions such as less likelihood of financial manipulation, tendency not to withhold bad news, and enhanced compulsory disclosures (e.g. financial statement notes).

6. Concluding remarks
The main objective of this research is to examine the relationship between family ownership and financial reporting quality from the auditor's perspective. For this purpose, we use a sample of 221 firms (52 met family firm criteria and 169 are non-family firms) listed on the TSE

Panel A: estimation results

Variable	Coefficient	*t*-statistic	Sig.
Family ownership	30.352	14.982	0.000***
Non-discretionary accruals	0.135	0.053	0.957
Auditor's change	−0.922	−0.363	0.716
End of fiscal year (March)	−31.662	−3.984	0.000***
Leverage	10.492	5.184	0.000***
Return of assets	−34.708	−2.329	0.020**
Company size	5.531	2.270	0.024**
Y-intercept	44.775	2.168	0.031**
R^2		0.18	
Adjusted R^2		0.16	
F-statistic		8.447	
Sig.		0.000	
Durbin-Watson statistic		1.87	

Panel B: mean differences

Variable	Levine test			*t*-test		
	F	Sig.	*t*	df	Sig.	
Audit effort	0.487	0.486	4.35	332	0.000	
			4.48	202.035	0.000	

Notes: *,**,***Significant at 10, 5 and 1 percent levels, respectively

Table VII.
Results of the third hypothesis testing (family ownership and audit effort)

during the 2011–2015. According to the results, there is a significant difference between the audit risk of family and non-family firms. Thus, it can be concluded that in family firms, the agency's conflicts between family owners and managers are less pronounced and they are not adequately motivated to maximize their personal interests and influence the financial reporting process.

On the one hand, auditors dedicate more time to conduct final audit of family firms, and this is not consistent with theoretical foundations. Perhaps, this is due to the importance of family firms from the auditor's perspective, so that auditors tend to further question and challenge the owners of family firms, which delay the completion of the fieldwork. On the other hand, they consider the level of audit risk lower than that of non-family firms, due to higher quality financial reporting in family firms. Higher quality financial reporting implies lower level of financial manipulation enhanced compulsory disclosures as well.

Generally, a review of literature suggests that the results of this study are consistent with the findings reported by Tsui *et al.* (2001), Griffin and Lont (2011), Chen *et al.* (2008), Kang (2012), Ghosh and Tang (2015). However, our results are not in line with the findings of Khan and Subramaniam (2012) and the third hypothesis of the Ghosh and Tang (2015) as well as the results of Ebrahimi *et al.* (2014).

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