



## A Meta-Analysis of Audit Fees Determinants: Evidence from an Emerging Market

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### Abstract

Using meta-analysis, we investigate the combined effect of the most extended independent variables in this literature line. The meta-analysis obtained results in a deeper understanding of the anomalies, mixed results, and gaps in audit fees research.

To achieve the desired objective, meta-analysis is used. The study's statistical population reviewed the most relevant studies on this subject published in Iranian and international journals for the 2000-2016 period. The effect of independent variables on audit fees is studied. A total of 162 studies, 146 published in international journals, and 16 in Iranian journals are considered the study sample.

Our findings suggest that some independent variables have consistent results, several show no precise rhythm to the results, and some others only indicate significant results in specific periods or certain countries; variables of audit quality, accounting firm size, industry specialization of the firm, accounting firm tenure and client size are positively correlated with audit fees. However, we conclude that there is no significant relationship between the risk of client firm and audit fees.

The current study is almost the first study conducted on the study's subject, and the results may help audit the profession.

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**Keywords:** Audit Fees, Audit Quality, Firm Size, Audit Tenure, Industry Specialization, Client Firm Size, Client Firm Risk

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## **1. Introduction**

In this paper, we concentrate mainly on the determinants of audit fees. The applied examination to form the current study to explore the domain of some of the audit fees drivers shown in prior studies is a meta-analysis, which is defined as a method for systematically combining pertinent qualitative and quantitative study data from several selected studies to develop a single conclusion that has higher statistical power. This conclusion is statistically more reliable than the analysis of any single study due to increased numbers of subjects, greater diversity among subjects, or accumulated effects and results. Meta-analysis investigation provides us generalizing the characters of the independent variables included in prior studies and assessing whether the obtain results of a set of investigations constitute the same phenomena. Moreover, meta-analysis “leads to more valid inferences about the knowledge of a set of studies” than can be derived from a narrative literature review.

Auditors use various factors for pricing audit services, and many studies including (Taylor & Simon, 1999; Bedard & Johnstone, 2010) in the U.S., (Pong, 2004) in the U.K., additionally conducted investigations in Australia include (Carson et al., 2004; Carson & Fargher, 2004), a related study in France (Gonthier-Besacier & Schatt, 2007), India Bangladeshi, and Pakistan (Ahmed and Goyal, 2005), Danmark (Thinggaard and Kiertzner, 2008), Bahrain (Joshi and Bastaki, 2000), Kuwait (Meshari, 2008) have attempted to identify and evaluate these factors. Descriptive factors addressed in most studies include risk factors, size, and complexity of the client's operations. Audit fees have been the subject of several studies, and determinants of audit fees have been widely explored in the literature.

However, the lack of comprehensive studies in this field is the primary motivation behind the present study. The audit fee is a function of several factors, the importance of which varies in different countries. One of the major controversies in the audit profession is determining minimum audit fees and some accounting firms' low-balling. However, auditing as a homogeneous product and its non-competitive pricing may compromise the audit services' independence and quality. Besides, it should be noted that independent auditing is the pillar of economic transparency, public trust in the capital market, and government accountability to the people (Seifzadeh et al., 2020). Therefore, it should not be treated the same as ordinary services. Today, many organizations using accounting firms' services consider low-pricing a critical factor in employing audit services. This conflicts with the nature of audit work that requires the auditor's independent judgment.

Consequently, many studies go after protecting the auditors from losing their objectivity and effectiveness as independent auditors. Moreover, legislators who set business regulations on companies could determine information about audit fees determinants (Salehi, 2020). The external audit fees services have four essential points of view: Firstly, fee determinant—secondly, the fees scale. Thirdly, billing the fee, and finally collecting the fee. The current study is supposed to extend the first aspect, which is the determination of audit fees.

Moreover, this study tends to identify the influential factors taken into account to determine the audit fees. These factors may directly affect the time of the audit work, or indirectly the audit fees level. By comparing audit fees in different countries, it can be seen that fees received by auditors in Iran are not comparable to other countries, especially in developed ones. In fact, in Iran, determining audit fees is a bone of contention. Given the controversies surrounding audit services pricing, there is no agreed-upon basis for determining the financial audit fees (Salehi et al., 2020a). Sometimes, the professional judgment of auditors leads to contradictory propositions. Therefore, identifying the determinants of audit fees is such a paramount concern. This issue, especially in recent years, after the Iranian Institute of Certified Accountants' formation, gained more

prominence. It is mainly because with the establishment of this institute, the audit market's monopoly was broken, leading to intensified competition between auditors. In most developed countries, this event took place years ago. Since the early 1970s to early 2000, most accounting firms' concentration is on their growth rather than professional values. By reducing the audit profession's regulatory requirements, accounting firms decide to pursue economic goals, seeking to earn a higher income and reduce costs in their audit projects (Salehi et al., 2020b). In such a situation, a successful auditor is the one who manages to offer the best estimate of audit fees, taking into account the characteristics of the client and to maintain the quality of auditing at the minimum cost. Being aware of these factors, the auditors will be able to fulfill reliable and consistent standards, leading to establishing a new professional order in pricing, providing that all auditors feel obliged to conform to these norms and regulations.

In this case, the audit profession's tarnished reputation, caused by the profiteering perspective of some accounting firms, would be recovered. Furthermore, determining the factors affecting the audit fee allows clients to appreciate better the value of these services and the benefits they pay this price. A better understanding of this fact will facilitate the audit work, leading to enhanced quality audits resulting from the client's greater involvement (Gist, 1992).

## **2. Theoretical framework and hypotheses development**

The external audit reports could not be adequately tackled by professionals working in that field. An employer-employee relationship's existence forced them to incorporate executives' perspective in preparing financial statements. However, financial statements should meet the needs of different groups of users who utilize financial statements. Therefore, the only solution was recruiting an independent and specialist auditor by the general assembly of shareholders. The gathering of highly skilled accountants with sufficient expertise to undertake these operations led to creating a professional auditing system in associations that required the coherence to professional conduct. An example of such associations was the Institute of Chartered Accountants in England, which was modeled in other countries (Audit Organization, 2009). Why did we decide to study audit fees? While the literature on the line of audit fees has found various purposes, two significant justifications are given: (1) to assess the competitiveness of audit markets, specifically in case of the small number of international service providers, and (2) to examine items of independence related to the audit process and contracting features (non-audit services, low-balling). Regardless of the intention, a usual methodology is developed to examine the determinants of audit fees that have been used in the vast body of published journal articles.

An estimation model is typically provided by regressing fees against various essential measures to related attributions hypothesized to measure the related issues to audit fees, either negatively or positively. The model is explained in chapter three. On the other hand, According to prior literature, the effective factors on the level of audit fees could generally be summarized into two comprehensive sets: Auditee firm features and audit firm features. It is suggested that auditee characteristics are given full attention in prior investigations (Salehi et al., 2020c). They include the components of client size (Simunic, 1980), risk (Hogan & Wilkins, 2008), complexity (Ghosh & Lustgarten, 2006), and profitability (Hay, Knechel & Wong, 2006). As explained before, auditor features are also taken into full consideration as significant drivers of external audit fees. Following characteristics are included; the quality of audit report (Palmrose, 1986), the audit firm size (Chan et al., 1993), the industry specialization (Craswell et al., 1995), the auditor tenure (Yidi, 2011) are present main features of audit firms which have a significant impact on the level of audit fees as many prior studies obtained. Based on previous

research, several institutional factors are identified which have an impact on audit fees.

In general, three major corporate governance with auditing needs have been proposed. These theories include:

### **2.1. The agency theory**

According to Jensen and Meckling (1976), when the agent (manager) is more informed of the internal operations of the company than the principal, assuming that the manager is primarily concerned with his interests, he will exploit the company's resources to his benefits by misappropriating the wealth of the principal. Therefore, sensible investors will consider such behaviors in pricing corporate securities and pay a lower price for those securities. Even as a last resort, they may withdraw their capital from the company. As a result, to prevent such events, investors attempt to establish mechanisms for monitoring and controlling opportunistic behaviors and motivations. The recruitment of an independent auditor represents one of these mechanisms. Accordingly, in the agency theory, the auditor's role is to bridge the information asymmetry gap and alleviate the risks of violating ethical principles (Salehi et al., 2019a). In the absence of an auditor, financial statements may be presented in a biased and inaccurate manner.

### **2.2. Signaling theory**

The relationship between internal corporate governance and audit fees may be defined by substitution and signaling theories (Wu, 2012). Following substitution theory, high disclosure and reliable and high-quality financial reports are a major part of the external audit and are done by internal corporate activities' efforts. This may reduce the auditor's risk of stating inaccurate audit opinion (Turley and Zaman, 2004, 2007). Carcello et al. (2002) suggest that audit risk is associated with effective internal corporate governance, reducing external auditors' effort and cost. Therefore, agency cost and external audit risk are expected to be reduced by effective internal corporate governance and controls. Thus, less external audit fee is expected. Hence, a negative association exists between external audit fees and effective internal corporate governance. Prior literature suggests inconsistent results on the association between effective internal corporate governance and external audit fees. Carcello et al. (2002) find that effective internal corporate governance causes less external audit risk and less external audit fees. Gul et al. (1998) indicate that effective internal corporate governance represented by the number of an independent board of directors and external audit fees are negatively associated. Li and Wang (2006) find a significant negative relationship between the board of director characteristics and audit fees.

Furthermore, Gregory and Collier (1996) and O'Sullivan (1999) find no association between the effectiveness of internal corporate governance and external audit fees. Other literature lines, including Stewart and Munro (2007), find that firms with more effective internal corporate governance tend to pay high external audit fees. The justifiable reason of their finding is presented by (Wang and Zhou, 2006; Wang, 2009) suggest that companies' management as a result of agency problems have the motivation to give the signal to the financial market that the effective internal corporate governance is established in the company under their control. They attempt to reduce agency costs and increase the company's value by appointing a high-quality external auditor to assure the stakeholders that management interest is not against their interest. As a consequence, this provides more trust in the company and allows the company easy access to various sources of the fund at a lower cost empirical research suggests that audit committees attempt to improve the quality of the external audit by extending the scope the external auditor's work and this successively increases audit fees (Gregory and Collier, 1996; Turley and Zaman, 2004). Then, audit committees impact external auditors' scope

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(Carcello et al., 2002; Turley and Zaman, 2007). In this regard, Zaman et al. (2011) express that firms with effective internal governance spent more time monitoring external audits more effectively than firms with low-quality internal governance to minimize potential risk litigation and enhance their reputation. This issue increases the scope of the external audit to ensure its quality. As a result, external audit fees will be high, or it is stated that external audit fees are positively related to the level of internal corporate governance. The inconsistent findings include; Gul et al. (2003) investigate the relationship between agency costs and external audit fees; they find a positive association between the two variables. Carcello et al. (2002) show a positively significant relationship between audit fees and board independence, expertise, and diligence. Goodwin-Stewart and Kent (2006) find that an audit committee, more frequent committee meetings, and increased internal audits are associated with high audit fees. Knechel and Willekens (2006) find that companies with audit committees and a more significant proportion of independent board members tend to pay high audit fees. But, O'Sullivan (1999) finds no association between external audit fees and the board of directors and the audit committee's characteristics. Presented results indicate that the empirical testing of signaling theory is not clear.

### **2.3. Assurance and insurance hypothesis**

Prior research also suggests that the audit services' value includes two primary components, assurance and insurance (Simunic 1980; and Dye 1993). According to the insurance hypothesis, which is paid scant attention compared to two other corporate governances, the auditing profession may suggest that they bear no responsibility for validating financial statements' results. However, investors argue that if they incur any financial damage resulting from misleading financial statements, auditors should reimburse their losses. Therefore, auditors may hold accountability in cases that involve losses to investors. Hence, auditors need to risk pricing their services so that in companies with poor performances (low profitability or bearing loss), such an incremental risk is proportionated with audit fees (Simunic, 1984). While prior research in this regard has presented evidence that the market determines the values of audit services, it also suggests that; it is difficult to distinguish these two characteristics and examine their effects solely (Menon and Williams, 1994; Baber et al., 1995; Willenborg, 1999; Khurana and Raman, 2004).

Since it is difficult to obtain the audit quality, the assurance function's value is closely related to auditor reputation and investors' understanding of their sensibility to preserve that reputation. Since reputation is a valuable tool that produces economic wealth, partners in audit firms tend to preserve their reputation by providing high-quality audit reports (Watts and Zimmerman, 1986, 1983; DeAngelo, 1981; Wilson and Grimplund, 1990; Davis and Simon, 1992). The insurance value is related to auditors' professional liability for breaches in audit quality. The implicit insurance function provides investors with the opportunity to recoup losses in low-quality auditing (Simunic, 1980; Dye, 1993). It is difficult to separate the effects of assurance and the insurance hypothesis empirically, conceptually distinct. For example, when an audit firm's going concern assumption is in doubt, both the assurance and the insurance values are influenced. It seems that investors' perception of the firm's audit quality is decreasing. The imminent downfall of the audit institutions is substantially dependent on fundamental questions about audit quality. Next, if the institution's audit partners have had private self-awareness in the audit firm's likely decline, their incentives to maintain the audit institution's reputation motivate the audit partners to conduct high-quality audits. Menon and Williams (1994) find negative cumulative abnormal returns for clients following the bankruptcy announcement. Similarly, Baber et al. (1995) state a decrease in market value for L&H clients, especially,

who had been financially distressed. It is suggested that the second finding is consistent with the market disciplining riskier clients that are expected to be bankrupted. Consequently, the investors had a higher likelihood of being retrieved from the auditor's insurance function.

### 3. Hypothesis development

Awareness of the audit fee determinants could be useful for both clients and auditors. For many investors, the audit fee is a matter of great concern. Although large companies with huge sales and high turnover, or some public companies may have no problem paying these costs, paying this heavy but inevitable price poses a serious challenge to most small enterprises or those with a troubled financial situation. Hence, from the client's perspective, the determinants of audit fees, either through bargaining or controlling these factors within the organization, can help companies reduce this service's costs (Salehi et al., 2019b). Knowledge of these factors will also enable auditors to price their services more reasonably. This issue has gained prominence, especially in recent years after the Iranian Institute of Certified Accountants' formation. It mounted a challenge to the monopoly of the accounting market and fueled the competition between auditors. This event occurred long before in developed countries. From the early 70s until early 2000, most accounting firms' focus has been their growth, rather than on professional values. The accounting firm has been under pressure to find new clients, maintain existing clients, and offer consultancy services, and failure to achieve these goals will bring about consequences, such as dismissal from work. In other words, it can be argued that in the last 20 years, the audit profession has seen rapid and dramatic changes. A reduction in the audit bureaucracy has allowed accounting firms to pursue more economic goals by growing their income and reducing audit works costs. In such a situation, a successful auditor is the one who manages to offer the best estimate of audit fee, taking into account the characteristics of the client, to maintain the quality of work at the minimum cost.

#### 3.1. Audit quality

In Palmrose's (1986) study, the audit quality is defined in terms of the auditor's credit rating. The ability to rely on audited financial statements is indicative of the audit quality. Audit quality is related to the effectiveness and efficiency of the audit process. Davidson and Neu (1993) also contend that audit quality rests in auditors' ability to detect flaws and manipulations in accounting and disclose distortions of the net profits.

In a meta-analysis study, Casterella et al. (2004) conclude that the rate of error and audit inconsistency had dropped significantly.

Willenborg (1999) states that the quality of audit services was influenced by accepting the auditor's proposed fees by the client. Hoitas & Barragato (2007) posited that auditors' payment could affect the audit quality in two ways. Firstly, higher audit fees can reinforce the auditors' efforts and consequently enhance auditing service quality. Secondly, higher fees paid to auditors make them economically dependent on their clients. They, out of concern to lose benefits received from the audited company, will be more motivated to observe high-quality standards in their work. Previous auditing literature shows mixed evidence about the relationship between the client's high or abnormal fee and audit quality. It is recommended that a high fee paid to the auditors may encourage them to put maximum efforts in conducting the audit and disclose the material financial misstatements of his client. Larcker and Richardson (2004) find that the relationship between accruals and abnormal audit fees is positive only when the audit fee is measured using a non-audit fee ratio to a total audit fee. Otherwise, there is no significant relationship between earnings quality and auditor's independence. Larcker and

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Richardson (2004) also find that the relationship between audit quality and audit fee is sensitive to the measures used for auditor independence. Their study's overall results suggest that auditors care about their reputation and 'reputation protection' refrains them from being lenient for a client in the audit of his financial misstatements. Therefore, auditors do not compromise their independence even they are paid a high fee.

Hence, the first hypothesis is as follows.

H1: Audit quality affects audit fees.

### **3.2. Audit firm size**

DeAgelo (1981) finds that audit quality is associated with audit firm size. Wright (1983) shows a significant difference in disclosure preferences; for example, auditors of national firms are likely to give some comments for financial adjustment while auditors of local firms prefer to suggest the footnotes for disclosure. They also find that environmental factors have an essential role in CPA firms and can affect auditor judgment.

In light of their reputation, large accounting firms hire more qualified auditors and apply stronger quality control. Research has shown that accounting firms with high reputation are more likely to demand higher fees.

Simunic (1980) shows no significant difference between small and large institutions in terms of audit fees. Palmrose (1986) and Gist (1992), on the other hand, contend that audit fees of large firms are radically different from small institutes. Chan et al. (1993) suggested that large accounting firms received higher fees than small firms.

Casterella et al. (2004) stated that owners of small enterprises with low bargaining power had to pay higher audit fees. Still, for owners with high bargaining power, the fee is usually lower. This is probably the case for large business owners that are active in specialized auditing,

Choi et al. (2010) find qualitative differences among large accounting firms, compared to smaller firms, lead to increased audit fees in competitive markets. Large accounting firms are more driven to live up to their reputation by delivering accurate reports. Failure to detect significant manipulations had adverse effects on the market of audit services. Therefore, these institutions go to greater lengths to achieve their professional goals, leading to increased audit fees.

Accordingly, the second research hypothesis is expressed as follows.

H2: The audit firm size affects audit fees.

### **3.3. Audit industry specialization**

The determination of audit fees may be sensitive to this matter and may be taken into account for some of the obtained results reported in our study. In the case of auditor specialization, there are a few agreements as to what organizes a specialist: Is it the firm that is the market leader in an industry, or is it any firm with more than a minimum share of the market? In this respect, Carson and Fargher (2004) find that any fee premium to industry specialization is confined to the few largest clients in each industry

According to Simon and Taylor (1997), in many developed countries, these factors have been explored as aggregate or single factors relatively. In some of these studies, the determinants of audit fees are divided into micro and macro factors. In other studies, the reasons for the success and failure of accounting firms in the audit services market have been explored, and effective ways to increase the audit quality services and cost reduction have been addressed. Craswell et al. (1995) concluded that auditors' industry

specialization is directly related to their charging of higher fees. Mayhew and Wilkins (2003) asserted that improved market share in a particular industry would foster the production and ultimately cut down prices. Also, they argue that when the industry's market share is significantly higher than that of other competitors, it allows specialist auditors to offer various services. Hence, the fees of specialist auditors go up when the market share of a particular industry rises.

Carson and Fargher (2007) also focused on specialist auditors' bargaining power concerning audit fees, reporting that small industrial firms, unlike large industrial companies, pay auditors' fees in line with their industry specialization. Large corporations possess high bargaining power.

Lowensohn et al. (2004) asserted that specialist auditors, who usually possess credible knowledge about a particular specialization, are better equipped to evaluate risk and examine conceptual errors.

Wang and Iqbal (2009) show that the four largest accounting firms with industrial specialization received higher fees than non-specialized auditors.

Lowensohn et al. (2007) also reported that specialization and the level of audit fees received by the accounting firms were not correlated. Their findings suggested that, as a policy, local firms might be more closely involved with auditors than with other companies.

Accordingly, the third hypothesis is proposed as follows:

H3: The industry specialization of an audit firm affects independent auditing fees.

### **3.4. Audit tenure**

The tenure includes the period during which the auditor interacts with the client, and the auditor tenure may affect auditor independence (Simunic et al. 2001). The tenure is also defined as the period in which an auditor investigates a business unit, company, or institution. Also, Vidi (2009) describes tenure as the length of interaction between the auditor and the client. Tenure is one of the determinants of audit fees, which have been reported to be positively or negatively related to this variable.

Chen et al. (2004) found that auditors usually obtain a deeper perception of the client's operations and more experience over time. Hence, their ability to assess the appropriateness of accounting and reporting procedures is reinforced. The long-term relationship between the auditor and the client can contribute to enhancing the audit quality. Nãoqui (2009) indicates that environmental factors can influence the process of pricing for initial audit contracts.

Asthana and Boone (2012) reported that auditor change brings down audit fees. Accounting firms also tend to lower audit fees to take new cases, though lower audit fees could be due to the audit fee market structure.

Accordingly, the fourth hypothesis is expressed as follows.

H4: The auditor tenure affects independent auditing fees.

### **3.5. Auditee firm size**

In a study by Reynolds and Francis (2000), it was suggested that large enterprises create a sort of economic dependence, as they undermine accounting firms' independence in an attempt to retain their valued customer.

Also, Kamran & Goyal (2005) reporting that firm size, degree of organizational



complexity, and reputation were among the determinants of audit fees.

Griffin et al. (2011) revealed that audit fee was significantly related to factors such as the type of audit report, auditor change, type of industry, current ratio, number of business units, and client size.

Accordingly, the fifth hypothesis is expressed as follows.

H5: The client firm size affects independent auditing fees.

### **3.6. Auditee risk factors**

For example, Nikkinen and Sahlstrom (2004) suggested that audit fee is significantly correlated with risk factors such as financial risk, operational risk, and business risk. Moreover, the findings of 45 studies revealed a significant relationship between the risk of client and audit fees.

Thus, the sixth hypothesis is expressed as follows.

H6: Client risk affects independent audit fees.

## **4. Research methodology**

Meta-analysis is a research method designed to help researchers obtain a proper combination of the quantitative results of conflicting and non-conflicting studies in the past, explain inconsistencies, and identify structural variables that moderate the results of past studies (Mueller et al., 2013). More precisely, the meta-analysis is a statistical method used to combine a series of independent research results, a set of studies that share a common hypothesis, and draw on inferential statistics to conclude about previous studies. In the meta-analysis, we seek to identify each hypothesis's effect size to achieve a criterion for comparing and testing these assumptions (Delavar, 2001).

One of the most fundamental concepts in meta-analysis is the size of the effect. It refers to the effect of the independent variable on the dependent variable. Cohen introduced this concept in 1977, and its importance has been stressed until today. According to this concept, a null hypothesis is attributing a zero effect size, so the null hypothesis's rejection means that the population's effect size is non-zero (the independent variable affects the dependent variable). The effect size measures are divided into two categories of a different family (d), mainly used to measure the standard differences between means and correlation (r) indices, which is chiefly based on Pearson correlation coefficients. A review of previous studies suggests that all accounting researches undertaken by the meta-analysis method have utilized the correlation of effect size.

The researchers, after extracting the statistics reported above, use the following formulas to convert the results into effect size (r) (Lipsy and Wilson, 2001).

$$(3-1) \quad r = \frac{t}{\sqrt{t^2 + df}}$$

$$(3-2) \quad r = \sqrt{\frac{x^2}{n}}$$

$$(3-3) \quad r = \frac{\sqrt{F}}{\sqrt{F + n_1 + n_2 - 2}}$$

Where n is the sample size of each study. The formulas for measuring the effect size

(Cohen's d) are as follows:

$$(3-4) \quad d = \frac{2t}{\sqrt{df}}$$

$$(3-5) \quad d = \frac{2\sqrt{F}}{df}$$

$$(3-6) \quad d = \frac{2r}{\sqrt{\frac{1}{r^2}}}$$

In the next step, the mean effect size must be calculated. Since the mean, as a measure of central tendency, requires normal distribution of correlation coefficients, but the effect size is not normal in this study, the effect size must be converted into Fisher's Z using the following formula

$$(3-7) \quad Z_r = 0.5 \log\left(\frac{1+r}{1-r}\right)$$

To determine the type and direction of the relationship between variables, an appropriate confidence interval is estimated using the following formula

$$(3-8) \quad Z_r - Z_{\alpha} \times \frac{\delta(Z_r)}{2} \leq Z_p \leq Z_r + Z_{\alpha} \times \frac{\delta(Z_r)}{2}$$

If zero is included in the obtained interval, it reveals the lack of any significant relationship between independent and dependent variables. Otherwise, the existence of a positive or negative relationship indicates the significance of variables. After calculating the confidence interval and determining the type and direction of the relationship between variables, the convergence test is performed to determine the possibility of integrating studies to obtain coherent outcomes using the following formula: (3-9)

$$H = \sum_{i=1}^N (n_i - 3)(Z_{ri} - Z_r)^2$$

The steps to determine the homogeneity of the coefficient is as follows: first, the H-value obtained from the above formula is compared with the critical value of the chi-square with df= K-1. If H is smaller than the table's significant value, the coefficient hypothesis's homogeneity is confirmed. If the H-value is more than the table's critical value, the coefficient hypothesis's homogeneity is rejected.

#### 4.1. Data collection method

The research data (i.e., p-values, t and F statistics, or chi-square reported for each of the sample variables) were collected using the library method and categorized for the implementation of meta-analysis.

#### 4.2. Study population and sample

In our meta-analysis, all studies undertaken on the subject of the present study, which contained essential terms such as the industry specialization of the accounting firm, accounting firm size, audit quality, client size, and client risk, were identified and collected from websites of foreign journals published in the 2000 to 2016 period and the websites of Iranian scientific journals published in 2001-2016 period as the statistical research population. In the end, from all collected papers, only studies (considering papers published in prestigious journals) were considered as the sample, in which the dependent variable was audit fees, and the Pearson's linear correlation coefficient between audit fees and each independent variable understudy or another statistic that was convertible to

Pearson correlation coefficient was significant.

The results of the study

Distribution of frequently

The following table shows the independent variables' distribution frequency in studies where audit fees were the dependent variable.

**5. Results**

**Table 1:** Frequency distribution of independent variables of previous studies

Variable	Frequency	Frequency in percent
Audit quality	53	32.7
Accounting firm size	61	37.6
Industry specialization of accounting firm	44	27.2
Auditory tenure	27	16.7
Client firm size	110	67.9
Client firm risk	50	30.8

Meta-analysis pieces of evidence

The above findings suggest that in 162 different studies undertaken in Iran and other countries over the 2000 -2016 period on determinants of audit fee, two variables of client firm size and audit firm tenure had the highest (67.9%) and the lowest (27.2%) effect among determinants of audit fees respectively.

**Table 2:** Results of the meta-analysis of the independent variable of audit quality

Variable	No	Zr.Mean	Zr.Variance	Confidence interval		t-statistics	Chi-square
				Lower limit	Upper limit		
Audit quality	53	0.029	0.011	0.006	0.051	45.636	69.832
Audit firm size	61	0.025	0.007	0.01	0.04	30.94	79.08
Industry specialization	44	0.026	0.011	0.004	0.048	43.428	59.3.03
Auditor tenure	27	0.018	0.008	0.001	0.034	14.497	38.885
Client firm size	110	0.026	0.009	0.007	0.044	73.25	134.36
client firm risk	50	0.026	0.013	0.000	0.053	67.245	66.338

Critical value (95% sig level)

**5.1. Statistical analysis related to the first hypothesis**

The results of table 1 suggest that the mean effect size of the variable of audit quality in 53 different studies on audit fees was 0.029. Moreover, since the confidence intervals of the effect size in these studies for the audit quality variable was (0.0151, 0.006) and in the positive range, there exists a positive relationship between audit quality and audit fees. Besides, since the homogeneity test (H) statistics at 95% confidence level were smaller than the critical value, the hypothesis of the homogeneity of coefficients is confirmed, indicating the possibility of integrating previous studies' results for this variable.

**5.2. Statistical analysis of data related to the second hypothesis**

The results of table 1 suggest that the mean effect size of the variable of accounting firm size in 61 different studies on audit fees published in Iranian and international journals was 0.225. The confidence interval of these studies' effect size for the accounting firm size was (0.04, 0.01) and in the positive range, indicating a positive relationship between the accounting firm size and audit fees.

### **5.3. Statistical analysis of data related to the third hypothesis**

The results of Table 2 reveal that the mean effect size of the variable of the specialization of the accounting firm in 44 studies published in Iranian and international journals on this subject was 0.026. Also, since the confidence interval of the effect size reported in these studies for the variable of the accounting firm's industry specialization was (0.048, 0.004) and in the positive range, there is a positive relationship between the industry specialization of the accounting firm and the audit fees. The assumption of the homogeneity of coefficients was confirmed, indicating the possibility of integrating previous studies' results for this variable.

### **5.4. Statistical analysis of data related to the fourth hypothesis**

The results of Table 2 reveal that the mean effect size of the variable of auditor tenure in 44 studies published in Iranian and international journals on this subject was 0.018. Also, since the confidence interval of the effect size of these studies for the variable of the auditor tenure was (0.034, 0.001) and in the positive range, there exists a positive relationship between auditor tenure and the audit fees—the results indicating the possibility of integrating the results of previous studies for this variable.

### **5.5. Statistical analysis of data related to the fifth hypothesis**

The results of Table 2 reveal that the mean effect size of the variable of client firm size in 110 studies published in Iranian and international journals on audit fees was 0.026. Also, since the confidence interval of these studies' effect size for the auditor tenure variable was (0.044, 0.007) and positive, there is a positive relationship between client firm size and audit fees. The assumption of the homogeneity of coefficients was confirmed, indicating the possibility of integrating previous studies' results for this variable.

### **5.6. Statistical analysis of data related to the sixth hypothesis**

The results of Table 2 reveal that the mean effect size of the variable of client firm risk in 50 studies published in Iranian and international journals on this subject was 0.026. Also, since the confidence interval of these studies' effect size for the variable of client firm risk was (0.044, 0.007) and positive, there is a positive relationship between client firm risk and audit fees. Besides, the assumption regarding the homogeneity of coefficients was confirmed, indicating the possibility of integrating previous studies' results for this variable.

### **5.7. Summary of statistical analysis of independent variables**

**Table 3:** Summing up the effect of study variables on audit fees

	<b>Variable</b>	<b>Type of effect</b>	<b>Hypothesis</b>
1	Audit quality	Positive	Confirmed
2	Accounting firm size	Positive	Confirmed
3	Industry specialization of accounting firm	Positive	Confirmed
4	Auditor tenure	Positive	Confirmed
5	Client firm size	Positive	Confirmed
6	Client firm risk	Positive	Confirmed

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## **6. Conclusion**

The mean effect size and confidence interval using the meta-analysis method on 162 studies on audit quality show that audit quality and audit fees were positively correlated. This is consistent with the 38 studies out of 53 studies in which this variable had been adopted. The mean effect size and confidence interval using the accounting firm size variable's meta-analysis method revealed a positive correlation between accounting firm size and auditing fees. This is consistent with the findings of 52 studies out of 61 studies that had adopted this variable. The results of the mean effect size and its confidence interval using the meta-analysis method for the accounting firm's industry specialization indicated industry specialization of an accounting firm, as the supply side's independent variable was positively related to audit fees. This is consistent with the findings of 32 studies out of 44 studies that had employed this variable. The mean effect size and confidence interval using the auditor tenure variable's meta-analysis show a positive correlation between auditor tenure, an independent variable on the supply side, and audit fees. This is in agreement with 16 studies out of 27 studies that had adopted this variable. The mean effect size and confidence interval using the client firm size variable's meta-analysis method indicated a positive correlation between client firm size, independent variable, and audit fees. This is in keeping with the results of 89 studies out of 110 studies that had utilized this variable. The mean effect size and confidence interval using the meta-analysis method for the variable of client firm risk show that the client firm risk, as an independent variable, was positively correlated with audit fees. This is in line with the findings of 44 studies out of 50 studies that had adopted this variable.

## **References**

- Ahmed, K. and Goyal, M. (2005). A Comparative Study of Pricing of Audit Services in Emerging Economies. *International Journal of Auditing*, 9(2),103–116. Doi: 10.1111/j.1099-1123.2005.00236.x
- Baber, W. Kumar, K. and Verghese, T. (1995). Client security price reactions to the Laventhol and Horwath bankruptcy. *Journal of Accounting Research*, 33(2), 385-395. <https://doi.org/10.2307/2491494>
- Bedard, C. and Johnstone, M. (2010). Audit Partner Tenure and Audit Planning and Pricing. *Auditing: A Journal of Practice & Theory*, 29(2), 45–70. <https://doi.org/10.2308/aud.2010.29.2.45>
- Carcello, J. Hermanson, D. Neal, T. and Riley, R. (2002). Board Characteristics and Audit Fees. *Contemporary Accounting Research*, 19(3), 365–84. <https://doi.org/10.1506/CHWK-GMQ0-MLKE-K03V>
- Carson, E. and Fargher, N. (2007). Note on audit fee premiums to client size and industry specialization. *Accounting & Finance*, 47(3), 423–446. <https://doi.org/10.1111/j.1467-629X.2007.00213.x>
- Carson, E. Fargher, N. Simon, T. and Taylor, H. (2004). Audit Fees and Market Segmentation - Further Evidence on How Client Size Matters within the Context of Audit Fee Models. *International Journal of Auditing*, 8(1), 79–91. Doi: 10.1111/j.1099-1123.2004.00159.x
- Chan, P. Ezzamel, M. and Gwilliam, D. (1993). Determinants of audit fees for quoted U.K. companies. *Journal of Business Finance and Accounting*, 20(6), 765–86. <https://doi.org/10.1111/j.1468-5957.1993.tb00292.x>
- Choi, J.H. Kim, Ch.F. Kim, J.B. and Zang, Y. (2010). Audit Office Size, Audit Quality, and Audit Pricing. *Auditing A Journal of Practice & Theory*, 29, 73–97. [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1011096](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1011096)
- Craswell, A.T. Francis, J.R. and Taylor, S.L. (1995). Auditor brand name reputations and

- industry specializations. *Journal of Accounting and Economics*, 20(3), 297–322. [https://doi.org/10.1016/0165-4101\(95\)00403-3](https://doi.org/10.1016/0165-4101(95)00403-3)
- Davidson R.A. and Neu, D. (1993). A Note on the Association between Audit Firm Size and Audit Quality. *Contemp. Account. Res.*, 9(2), 479-488. Doi: 10.1111/j.1911-3846.1993.tb00893.x
- Davis, L. and Simon, D. (1992). The impact of SEC disciplinary actions on audit fees. *Auditing: A Journal of Practice and Theory*, 11(1), 58-68.
- DeAngelo, L. (1981). Auditor size and audit quality. *Journal of Accounting and Economics*, 3(3), 183-199. [https://doi.org/10.1016/0165-4101\(81\)90002-1](https://doi.org/10.1016/0165-4101(81)90002-1)
- Dye, R. (1993). Auditing standards, legal liability, and auditor wealth. *Journal of Political Economy*, 101(5), 887-914. <https://www.jstor.org/stable/2138601>
- Ghosh, A. and Lustgarten, S. (2006). Pricing of initial audit engagements by large and small audit firms. *Contemporary Accounting Research*, 23(2), 333-368. <https://doi.org/10.1506/927U-JGJY-35TA-7NT1>
- Gist, W.E. (1992). Explaining variability in external audit fees. *Accounting and Business Research*, 23(89), 79–84. <https://doi.org/10.1080/00014788.1992.9729863>
- Gonthier, B. and Schatt, A. (2007). Determinants of audit fees for French quoted firms. *Managerial Auditing Journal*, 22(2), 139-160. <https://doi.org/10.1108/02686900710718654>
- Goodwin-Stewart, J. and Kent, P. (2006). The use of internal audit by Australian companies. *Managerial Auditing Journal*, 21(1/2), 81-101. <https://doi.org/10.1108/02686900610634775>
- Gregory, A. and Collier, P. (1996). Audit fees and auditor change; an investigation of the persistence of fee reduction by type of change. *Journal of Business Finance & Accounting*, 23(1), 13-28. <https://doi.org/10.1111/j.1468-5957.1996.tb00399.x>
- Griffin, P.A. Lont, D.H. and Segal, B. (2011). Enforcement and disclosure under regulation fair disclosure: an empirical analysis. *Accounting & Finance*, 51, 947–983. Doi: 10.2139/ssrn.1574102
- Gul, F.A. Chen, C.J.P. and Tsui, J.S.L. (2003). Discretionary accounting accruals, managers' incentives, and audit fees. *Contemporary Accounting Research*, 20(3), 44–64. <https://doi.org/10.1506/686E-NF2J-73X6-G540>
- Gul, F.A. Tsui, J.S.L. Chen, C.J.P. (1998). Agency Costs and Audit Pricing: Evidence on Discretionary Accruals. Available at SSRN: <https://ssrn.com/abstract=62750>
- Hay, D. Knechel, W. and Wong, N. (2004). Audit Fee: A Meta-analysis of The Effect of Supply and Demand Attribute. *Contemporary Accounting Research*, 23(1), 141-191. <https://doi.org/10.1506/4XR4-KT5V-E8CN-91GX>
- Hogan, E. and Wilkins, M. (2008). Evidence on the Audit Risk Model: Do Auditors Increase Audit Fees in the Presence of Internal Control Deficiencies?. *Contemporary Accounting Research*, 1(25), 219-242. <https://doi.org/10.1506/car.25.1.9>
- Jensen, M. and Meckling, W. (1976). Theory of the Firm: Managerial Behavior, Agency Costs, and Ownership Structure. *Journal of Financial Economics (JFE)*, 3(4), <https://ssrn.com/abstract=94043>
- Joshi, P.L. and Al-Bastaki, H. (2000). Determinants of audit fees: evidence from the companies listed in Bahrain. *International Journal of Auditing*, 4(2), 129-38. <https://doi.org/10.1111/1099-1123.00308>
- Kamran. A. and Goyal, Mahendra, K. (2005). A Comparative Study of Pricing of Audit Services in Emerging Economies. *International Journal of Auditing*, 9(2), 103-116. Doi: 10.1111/j.1099-1123.2005.00236.x
- Khurana, I. and Raman, K. (2004). Litigation risk and financial reporting credibility of Big 4 versus non-Big 4 audits: Evidence from Anglo-American countries. The

- Accounting Review, 79(2), 473-495. <https://www.jstor.org/stable/3203253>
- Knechel, W.R. and Willekens, M. (2006). The Role of Risk Management and Governance in Determining Audit Demand. *Journal of Business Finance & Accounting*, 33 (9–10), 1344–67. Doi: 10.1111/j.1468-5957.2006.01238.x
- Larcker, D.F. and Richardson, S.A. (2004). Fees paid to audit firms, accrual choices, and corporate governance. *Journal of Accounting Research*, 42(3), 625–658. <https://doi.org/10.1111/j.1475-679X.2004.t01-1-00143.x>
- Li, B.X. and Wang, P.X. (2006). Board characteristics and ratios of audit fee to asset. *China Accounting Review*, 1, 105–118. [https://en.cnki.com.cn/Article\\_en/CJFDTotal-ZKJP200601008.htm](https://en.cnki.com.cn/Article_en/CJFDTotal-ZKJP200601008.htm)
- Lowensohn, S. and Reck, J. (2004). Longitudinal analysis of local government audit quality. *Research in Governmental and Nonprofit Accounting*, 11, 213–228. Doi: 10.1016/S0884-0741(04)11010-0
- Lowensohn, S. Johnson, L. E. Elder, R.J. and Davies, S.P. (2007). Auditor specialization, perceived audit quality, and audit fees in the local government audit market. *Journal of Accounting and Public Policy*, 26(6), 705–732. <https://doi.org/10.1016/j.jaccpubpol.2007.10.004>
- Mayhew, B.W. and Wilkins, M.S. (2003). Audit firm industry specialization as a differentiation strategy: Evidence from fees charged to firms going public. *Auditing: A Journal of Practice & Theory*, 22(2), 33–52. <https://doi.org/10.2308/aud.2003.22.2.33>
- Meshari, O. (2008). The pricing of audit services: evidence from Kuwait. *Managerial Auditing Journal*, 23(7), 685 – 696. <https://doi.org/10.1108/02686900810890643>
- Nikkinen, J. and Sahlstrom, P. (2004). Scheduled domestic and U.S. macroeconomic news and stock valuation in Europe. *Journal of Multinational Financial Management*, 14(3), 201-215. <https://doi.org/10.1016/j.mulfin.2003.01.001>
- O’Sullivan, N. (1999). Board Characteristics and Audit Pricing Post-Cadbury: A Research Note. *European Accounting Review*, 8(2), 253–63. <https://doi.org/10.1080/096381899336023>
- Palmrose, Z. (1986). Audit fees and auditor size: Further evidence. *Journal of Accounting Research*, 24(1), 97-110. <https://doi.org/10.2307/2490806>
- Pong, M. (2004). A Descriptive Analysis of Audit Price Changes in the U.K. 1991–95. *European Accounting Review*, 13(1), 161–178. <https://doi.org/10.1080/0963818032000134921>
- Reynolds, J. and Francis, R. (2000). Does Size Matter? The Influence of Large Client on Office-Level Auditor Reporting Decisions. *Journal of Accounting and Economics*, 30(3), 375-400. [https://doi.org/10.1016/S0165-4101\(01\)00010-6](https://doi.org/10.1016/S0165-4101(01)00010-6)
- Salehi, M. (2020), "The relationship between the companies’ political connections and audit fees", *Journal of Financial Crime*, Vol. ahead-of-print No. ahead-of-print. <https://doi.org/10.1108/JFC-04-2020-0066>
- Salehi, M., BehrouziYekta, M. and Rezaei Ranjbar, H. (2020b), "The impact of changes in cash flow statement items on audit fees: evidence from Iran", *Journal of Financial Reporting and Accounting*, Vol. 18 No. 2, pp. 225-249. <https://doi.org/10.1108/JFRA-09-2018-0074>
- Salehi, M., Fakhri Mahmoudi, M.R. and Daemi Gah, A. (2019b), "A meta-analysis approach for determinants of effective factors on audit quality: Evidence from emerging market", *Journal of Accounting in Emerging Economies*, Vol. 9 No. 2, pp. 287-312. <https://doi.org/10.1108/JAEE-03-2018-0025>
- Salehi, M., Jahanbin, F. and Adibian, M.S. (2019a), "The relationship between audit components and audit expectation gap in listed companies on the Tehran stock exchange", *Journal of Financial Reporting and Accounting*, Vol. 18 No. 1, pp. 199-

222. <https://doi.org/10.1108/JFRA-12-2018-0115>
- Salehi, M., Lari Dasht Bayaz, M., Mohammadi, S., Adibian, M.S. and Fahimifard, S.H. (2020a), "Auditors' response to readability of financial statement notes", *Asian Review of Accounting*, Vol. 28 No. 3, pp. 463-480. <https://doi.org/10.1108/ARA-03-2019-0066>
- Salehi, M., Saravani, M. and Rouhi, S. (2020c), "The relationship between audit components and audit market adaptability", *Journal of Financial Crime*, Vol. 27 No. 3, pp. 835-853. <https://doi.org/10.1108/JFC-03-2020-0035>
- Seifzadeh, M., Salehi, M., Abedini, B. and Ranjbar, M.H. (2020), "The relationship between management characteristics and financial statement readability", *EuroMed Journal of Business*, Vol. ahead-of-print No. ahead-of-print. <https://doi.org/10.1108/EMJB-12-2019-0146>
- Simon, D.T. and Taylor, M.H. (1997). The market for audit services in Pakistan. *Advances in International Accounting*, 10(1), 87–101.
- Simunic, D.A. (1980). The pricing of audit services: Theory and evidence. *Journal of Accounting Research*, 18(1), 161–190. <https://doi.org/10.2307/2490397>
- Stewart, J. and Munro, L. (2007). The impact of audit committee existence and audit committee meeting frequency on the external audit: Perceptions of Australian auditors. *International Journal of Auditing*, 11(1), 51-69. <https://doi.org/10.1111/j.1099-1123.2007.00356.x>
- Taylor, M.H. and Simon, D.T. (1999). Determinants of audit fees: The importance of litigation, disclosure, and regulatory burdens in audit engagements in 20 countries. *International Journal of Accounting*, 34(3), 375–88. [https://doi.org/10.1016/S0020-7063\(99\)00017-5](https://doi.org/10.1016/S0020-7063(99)00017-5)
- Thinggaard, F. and Kiertzner, K. (2008). Determinants of Audit Fees: Evidence from a Small Capital Market with a Joint Audit Requirement. *International Journal of Auditing Int. J. Audit*, 12(2), 141-158. Doi: 10.1111/j.1099-1123.2008.00377.x
- Turley, S. and Zaman, M. (2004). The Corporate Governance Effects of Audit Committees. *Journal of Management and Governance*, 305(8), 32-46. <https://link.springer.com/article/10.1007/s10997-004-1110-5>
- Turley, S. and Zaman, M. (2007). Audit Committee Effectiveness: Informal Processes and Behavioural Effects. *Accounting, Auditing & Accountability Journal*, 20(5), 765–88. [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1069911](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1069911)
- Wang, K.O. and Iqbal, Z. (2009). Audit pricing and auditor industry specialization in an emerging market: Evidence from China. *Journal of International Accounting, Auditing, and Taxation*, 18(1), 60-72. <https://doi.org/10.1016/j.intaccaudtax.2008.12.006>
- Wang, P. and Zhou, L.A. (2006). Auditor's choice by China's listed companies and its governance role. *China Accounting Review*, 2, 88–98. [http://en.cnki.com.cn/Article\\_en/CJFDTotol-ZKJP200602009.htm](http://en.cnki.com.cn/Article_en/CJFDTotol-ZKJP200602009.htm)
- Watts, R. and Zimmerman, J. (1986). *Positive accounting theory*. Prentice-Hall. Englewood Cliffs, NJ.
- Willenborg, M. (1999). Empirical analysis of the economic demand for auditing in the initial public offerings market. *Journal of Accounting Research*, 37(1), 225–39. <https://doi.org/10.2307/2491405>
- Wilson, T. and Grimlund, R. (1990). An examination of the importance of an auditor's reputation. *Auditing: A Journal of Practice and Theory*, 9(2), 43-59.
- Wu, X. (2012). Corporate governance and audit fees: Evidence from companies listed on the Shanghai Stock Exchange. *China Journal of Accounting Research*, 5(4), 321–342. <https://doi.org/10.1016/j.cjar.2012.10.001>
- Yidi, X. (2011). The determinants of audit fees: an empirical study of Chinese listed



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of Audit  
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Determina  
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Evidence  
from an  
Emerging  
Market**

companies. Master Thesis, The Department of Business Administration, Lund University, Sweden.

Zaman, M. Hudaib, M. and Haniffa, R. (2011). Corporate Governance, Audit Fees and Non-Audit Services. *Journal of Business Finance & Accounting*, 38 (1-2), 165–197. <https://doi.org/10.1111/j.1468-5957.2010.02224.x>