Audit Qualification Paragraphs and Audit Report Lag: Evidence from Iran

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On behalf of all authors, the corresponding author states that there is no conflict of interest.
Data availability

https://docs.google.com/spreadsheets/d/13BNw9GtUYqDgzTLS4MKScyYVKw7vy6r_/edit?usp=sharing&ouid=110966491478224850911&rtpof=true&sd=true

Audit Qualification Paragraphs and Audit Report Lag: Evidence from Iran

Abstract

We investigate whether the number and type (the nature and repetitiveness) of audit qualification paragraphs (AQPs) play a role in audit report lag (ARL). We use a unique dataset of listed firms in Iran where the multitude and diversity of AQPs are very high. The results show that ARL is longer for firms with a greater number of AQPs, that there is a significant positive relationship between all AQP types and ARL except for misclassification of accounting numbers in financial statements, and that ARL increases with the number of non-repetitive AQPs. We employed several sensitivity tests, and the results did not change materially. Drawing on prior studies, we have developed two arguments, "additional audit procedures" and "auditor-client negotiations", to explain the role of the number and type of AQPs on ARL. The findings of this study have significant implications for investors, auditors and authority bodies in terms of paying close attention to the number and type of AQPs in their decisions.

Keywords Audit qualification paragraphs (AQPs); number and reasons for AQPs; AQPs' repetitiveness; audit report lag (ARL).

Paper type Research paper

1. Introduction

Long delays in the disclosure of audited financial reports are a major concern for investors (Mirshekary & Saudagaran, 2005; Habib & Bhuiyan, 2011); as a result, this issue has garnered the attention of regulators (e.g., SEC, 2002, 2004, 2005; EU, 2010; Securities and Exchange Organization, 2004, 2005) and researchers around the world (e.g., MohammadRezaei & Mohd-Saleh, 2018). This is because delay in the audit report reduces the usefulness of information contained in financial statements. Audit report lag (ARL) is the length of time from a firm's fiscal year-end to the date of the auditor's report (Newton & Ashton, 1989). Many studies have examined the role of different factors (see, Habib, Bhuiyan, Huang, & Miah, 2019; Durand, 2019) such as qualified audit opinion on ARL (e.g., Bamber, Bamber, & Schoderbek, 1993; Ireland, 2003).

The extant literature reveals that there are a considerable number of and underlying reasons (nature) for audit qualification paragraphs (AQPs) in China (see, Chen, Chen, & Su, 2001), France (Soltani, 2002), Greece (Leventis, Weetman, & Constantinos, 2005) and Spain (see, Muñoz-Izquierdo, Segovia-Vargas, Camacho-Miñano, & Pascual-Ezama, 2019; Muñoz Izquierdo, Laitinen, Camacho-Miñano, & Pascual-Ezama, 2020). However, not only there is a dearth of studies on the effects of the number and type (nature) of AQPs on ARL, but also the existing evidence (e.g., Leventis et al., 2005; Whittred, 1980; Soltani, 2002) is less appropriate to be generalised to different jurisdictions and periods. This is because the evidence provided by Whittred (1980) and Soltani (2002) is just based on descriptive and univariate analysis and fails to provide evidence from multivariate analysis. In addition, the multivariate analysis of Leventis et al. (2005) is just about the number of audit remarks and fails to cover the nature of AQPs. Moreover, there is no evidence about the potential role of AQPs' repetitiveness (repetitive vs. non-repetitive AQPs) on ARL. Furthermore, in line with Khoo, Lim, and Monroe (2020), changes in auditing standards and tightening reporting deadlines in recent years may create a significant doubt about the generalisability of the findings of these pieces of outdated evidence about AQP's role on ARL.

Iran provides a unique setting for examining the role of the number and type (nature and repetitiveness) of AQPs on ARL. More specifically, the release of modified opinions is considerably more frequent in Iran than in other countries (about 31% in Greece; Tsipouridou & Spathis, 2014), with about 60% of all audit opinions issued between 2012 and 2017 being modified (see, MohammadRezaei, Faraji, & Heidary, 2021). The reasons most frequently provided by auditors for audit opinion qualification in Iran include: the failure to receive a response to third-party confirmation letters, miscalculation of cost of goods sold, and non-recognition of expenses and provisions, among others (MohammadRezaei, Mohd-Saleh, Jaffar, & Hassan, 2016). Moreover, the anecdotal evidence of HovansianFar (2010) and the empirical evidence of Malekian (2000) indicate that most AQPs in Iran are a reiteration of AQPs issued in previous years. In other words,

repetitiveness of AQPs is also common in the Iranian context. This situation arises from environmental factors including tax law, corporate governance law, concentrated ownership structure, state and semi-state ownership, which shape supply and demand for audit services.[1] Given the long ARLs[2] and the multitude and variety of AQPs in Iran, an interesting question is to what extent do these aspects of AQPs (number, nature, and repetitiveness) have a role in ARL?

To theoretically explain the possible relation between AQPs and ARL and drawing on prior studies (e.g., Whittred, 1980; Bamber et al., 1993; Schwartz & Soo, 1996; Soltani, 2002; Leventis et al., 2005), we have developed two arguments[3], "additional audit procedures" and "auditor-client negotiations", which have also been considered as important reasons for the longer ARL in the case of audit opinion qualification. This is also the theoretical contribution of the paper since the previous studies lacked such a theoretical foundation in analysing the data.

Leventis et al. (2005) discuss that the number of audit remarks (i.e., AQPs) is positively associated with ARL; because, in such a situation, auditors are more likely to employ additional resources to obtain sufficient and persuasive evidence and client firms' managers are more likely to negotiate with the auditors to reduce the number of AQPs and attempts to adjust the tone of AQPs that cannot be resolved (MohammadRezaei & Faraji, 2019). However, a wide range of AQPs are likely to contribute to extending audit procedures and audit-client negotiations and accordingly on ARL. That is, more challenging AQPs such as non-recognition of expenses and provisions (see, MohammadRezaei et al., 2016[4]; Muñoz-Izquierdo

[1] It is important to note that audited financial reports are the main sources for decision making by many users in Iran (see, Mirshekary & Saudagaran, 2005). For instance, there is an information asymmetry between the majority shareholders and the minority shareholders. This is the case because majority shareholders as board members or chief executive officers have close channels to the firms while minority shareholders only have access to the information publicly published by the firms (MohammadRezaei et al., 2015).

[2] In addition, long delays in releasing audited financial reports are another common concern in Iran (Mirshekary & Saudagaran, 2005). MohammadRezaei and Mohd-Saleh (2018) show that the average ARL is longer in Iran (about 82 days) compared to other emerging markets such as Bahrain (see Al-Ajmi, 2008).

[3] It should be noted that the "additional audit procedures" is not a part of routine programmes and, according to Auditing Standard 3015, must be implemented in the case of occurrence of material misstatements in the client firms' financial reports. Furthermore, in the situation of potential audit opinion qualification, not only auditors, in light of ISA 705, are required to negotiate with client firms' governance bodies, but also both auditors (e.g., Soltani, 2002) and client firms' manager (e.g., Whittred, 1980; Begley & Fischer, 1998) have enough incentives for negotiations, which is more likely to result in longer ARL.

[4] Our study is different from MohammadRezaei et al. (2016) in that study audit opinions are the dependent variable and they provided a descriptive analysis about the reasons for audit report qualification and did not test the role of AQPs on ARL.

et al., 2019) are more likely to result in extensive audit procedures and time-consuming negotiations with client firms' managers, and consequently long ARL.

We used data from firms listed on the TSE over the 6-year period 2011-2016 to test the effect of the number, type, and repetitiveness of AQPs on ARL. Consistent with our predictions, our study found that ARL increases with the number of AQPs and non-repetitive AQPs, and, importantly, different types of AQPs have different effects on ARL.

Our study contributes to the literature in several ways. Our findings about the longer ARL for firms with a higher number of AQPs support the findings of Leventis et al. (2005), which is the only evidence in the same area, and also strengthen this narrow body of knowledge. Although Whittred (1980) and Soltani (2002) have studied the role of AQPs' nature on ARL through descriptive analysis or univariate analysis, our study, for the first time, uses multivariate analysis to provide more robust evidence about this relation.[5] In addition, this study is more likely to extend the literature through examining a number of AQPs with different natures that have not been studied by prior research. Moreover, the present study, for the first time, examines and provides evidence about the different roles of repetitive vs. non-repetitive AQPs on ARL. Such evidence is more likely to extend our understanding about the role of underlying factors (additional audit procedures and auditor-client negotiations) on ARL. Furthermore, compared to the prior studies in this area such as Whittred (1980), Schwartz and Soo (1996), Soltani (2002) and Leventis et al. (2005), our findings are more robust, which is the result of a number of tests applied to control for the potential endogeneity problem. Finally, the present research used dynamic panel data estimators to show that last year's ARL is likely to play a role in the current year's ARL. Our findings support our premise and reveal that the previous year's ARL has a positive relation with the current year's ARL. Such a finding is likely to highlight the importance of the inclusion of lagged ARL in research models of ARL studies to obtain more reliable results.

Our research can be useful to users of financial statements in annual general meetings and other forms of corporate accountability. The findings suggest that it is also necessary to consider AQPs in decision making and to demand timely audit reports with little to no delay (to remove the barriers to auditor independence when negotiating with the client). More specifically, paying closer attention to non-repetitive AQPs due to their potential effect on financial statements and asking the management to resolve and remove repetitive AQPs can be an appropriate policy for shareholders. In addition, the findings of this study can be important for policy makers, auditors, investors and academics in countries where the number of and underlying reasons (nature) for AQPs are considerable, such as in China, France, Greece and Spain. For

[5] Leventis et al. (2005) have not tested the nature of AQPs on ARL. The authors have just examined the role of the number of audit remarks on ARL.

instance, our study will complement the findings of Muñoz-Izquierdo et al. (2020) about the role of different type of AQPs on financial distress prediction in Spain. In addition, our further findings about the role of the broadest groups of reasons for AQPs, namely (i) scope limitation and (ii) departure from accounting standards, are more likely to be generalisable to other contexts. Finally, our findings indicate that, following many changes in auditing standards and tightening of audit report deadlines (see, Khoo et al., 2020), ARL is still longer for firms with a higher number and more challenging nature of AQPs.

The remainder of the article is organised as follows. First, the Iranian research setting is discussed, followed by a summary of the theoretical framework, a review of the literature and hypotheses development. Then, the research design and the findings (descriptive statistics, hypothesis testing and sensitivity tests) are provided. The final section presents the discussion and draws conclusions.

2. Institutional background

2.1. The Iranian audit market

Prior to the Iranian Revolution in 1979, international audit firms provided audit and assurance services in Iran. After the revolution, most industries and companies were nationalised, and international audit firms were prohibited from operating in the country. Three state entities were established to audit newly nationalised and seized companies. These entities were merged, and the Iran Audit Organization (IAO) was established in 1987. Until 2001, the IAO dominated the Iranian audit market as the sole auditing entity (Roudaki, 2008; Bagherpour, Monroe, & Shailer, 2014).

Since 2001, enactment of the 'Use of Specialized and Professional Services of Qualified Accountants as Certified Public Accountants Act' has liberalised the Iranian audit market, and a large number of private audit firms have been established, leading to strong competition within the market (MohammadRezaei et al., 2016). Currently, both the IAO as a governmental audit entity and the private audit firms affiliated with the Iranian Association of Certified Public Accountants (IACPA) are active in the market, with the former having a monopoly over state-owned enterprises, while the latter operates in a competitive environment. As of 2021, there were 245 firms listed as members of the IACPA, of which 80 firms are trusted audit firms that are allowed to provide services to the firms listed on the TSE and the Iranian over-the-counter market. Recently, the Securities and Exchange Organization (SEO) of Iran has started ranking trusted audit firms.

Concentrated shareholders as the main player on the demand-side have less incentives to prefer quality audit services in Iran.[6] Demand is low for a variety of reasons, such as high ownership concentration[7] (lack of agency problem between owners and managers), the state-dominated structure of the economy, financing from banks with fixed interest rates, the weak role of the SEO as the oversight mechanism of the capital market, weak corporate governance[8], and a lack of large and complex firms with higher agency problems. In terms of supply-side competences, a lack of demand for quality differentiated auditors is a key factor that reduces the auditors' incentives to provide quality services. Auditors' incentives to provide high-quality audit services due to litigation risk are similar to those in emerging and developing countries and not as strong as those in developed countries. The main incentive for Iranian auditors is the penalties imposed by the SEO for trusted audit partners. This is the case because in Iran, since both the engagement and review partners sign the audit report, the authoritative bodies and the legal system hold signing partners accountable and often penalise them for any audit deficiencies. Such a situation provides some incentives to audit partners to offer audit services with a quality level that protects them from the penalties.

In such an environment, the release of qualified audit reports with multiple qualification paragraphs and with long delays is not surprising (MohammadRezaei & Mohd-Saleh, 2018), and the analysis of the number, type and nature of AQPs would enhance our knowledge of the impact of AQPs on ARL.

2.2. Audit qualification paragraphs in Iran

The Iranian auditing standards are based on the International Auditing and Assurance Standards (IAAS) (Roudaki, 2008). Accordingly, four types of audit opinions are issued: qualified, unqualified, disclaimer

[6] The weak demand for high-quality audits arises from because there is no information asymmetry for the main players, majority shareholders as owner-managers. Hence, timely reporting that is high quality does not have enough value added for the majority shareholders. In addition, although information symmetry is more likely to be an issue for other stakeholders like minority shareholders, such players do not have enough motivation and regulatory support to play an effective monitoring role (see, MohammadRezaei et al., 2015). In such a situation, the lack of demand for high-quality audit services results in low-quality (the non-compliance with accounting standards that results in a higher number of AQPs) and non-timely (longer ARL) financial reporting.

[7] With the active presence of majority shareholders as CEO or board member in the company, other forms of agency problems such as those between majority and minority shareholders are conceivable, but minority shareholders and other stakeholders do not play a significant role in the demand for quality (MohammadRezaei et al., 2015) despite their need for quality auditing (Mirshekary & Saudagaran (2005).

[8] Corporate governance laws in Iran have become obsolete (Roudaki, 2008). Although the SEO has recently published guidelines for updating corporate governance laws for listed firms, in practice, these laws are still lagging behind their intended functions.

and adverse. Qualified opinions are more frequent than the others, while adverse opinions and disclaimer opinions are rarely issued. Trends since 2001 have shown that the number of modified opinions has decreased in Iran (MohammadRezaei et al., 2016). It is important to note that, although the new expanded audit reporting was launched by the new International Standard on Auditing (ISA) 701 in 2016, this expanded form of audit reporting has not yet been enforced in Iran. In Iran, the latest changes in audit reporting are related to the revision and development of auditing standards 700, 705 and 706 in 2010 by the IAO. This audit reporting format has been in force since 2010. Hence, there is no enforcement or auditing standard in Iran specifying the reporting 'key audit matters'.

The main reasons for audit report qualification in Iran are significantly different from the practice in the U.S. and China (MohammadRezaei et al., 2016). Although the reasons for the issuance of qualified opinions in Iran can be classified under two well-known and broad categories, i.e., (1) scope limitation and (2) departure from accounting standards, these reports contain a wide range of AQPs (MohammadRezaei et al., 2016). It must be noted that the multitude and variety of AQPs do not result from a different or stricter set of accounting standards; rather, the Iranian accounting standards are generally based on the International Accounting Standards (IAS), although some adjustments have been made based on the specific circumstances of the country, and some standards have been rejected (see Mashayekhi & Mashayekh, 2008).

Consistent with MohammadRezaei et al. (2016) and as shown in Panel A of Table 2, three types of AQPs are mainly highlighted by Iranian auditors: non-recognition of expenses, failure to receive a response to third-party confirmation letters and miscalculation of cost of goods sold. Non-recognition of expenses covers 55.82% of all AQPs and includes such things as insufficient reserve for income tax, insufficient reserve for doubtful debts and insufficient reserve for devaluation of inventories. Such departures from accounting standards mainly come from the tax law and its practices in Iran. That is, the basis for income tax is earnings reported in audited financial statements[9] and often there are significant differences between the income tax calculated or declared by firms and that evaluated by the Tax Admission Organization (TAO) of Iran.[10] Such differences arise from the discretion granted to the tax officers in evaluation of firms' income tax.[11] In addition, the Iranian Tax Law does not recognise expenses related to reserves for doubtful debts, devaluation of assets and devaluation of inventories as acceptable tax expenses. Hence, managers do

[9] The rate of income tax for firms in Iran is 25%.

[10] Both firms and TAO calculate or evaluate income tax based on audited financial statements.

[11] For instance, the tax law grants discretion to tax officers to accept or reject some expenses like those relating to discount or marketing commission if the officer judges that the expenses are higher than the norms of the industry.

not comply with accounting standards because these reserves decrease a firm's earnings as reported in its financial reports but do not decrease its income tax. Moreover, when firms report an amount of money as a deficit in their income tax reserves, they are basically acknowledging that they have a deficit and must pay the amount, while the TAO demands additional tax after its review. In such a situation, when a firm receives a "tax assessment letter", it does not record the difference between declared and assessed income tax because, if the firm did record it, that would imply that it has accepted the TAO's claim and must pay it to the body. In fact, in such a situation, the firm not only does not record the difference; it even protests about the tax assessment letter. The interval between the issuance of the "tax assessment letter" and considering the firm's protest to the TAO may be more than one year; during this time, the auditor asks the firm to record the reserve for income tax claimed by the TAO and, if the firm does not follow the suggestion, this results in an AQP.

In general, given the different research setting in Iran, which is characterised by a low demand for quality audits by main players, a lack of strong incentives for client firms to resolve repetitive paragraphs from previous years (Malekian, 2000), regulatory constraints enforced in the tax law, and the challenging nature of non-repetitive AQPs (Barzegari & Talebnia, 2014), it can be stated that a large number of observations have both repetitive and non-repetitive AQPs, and a smaller number of observations have non-repetitive AQPs.

3. Literature review and hypothesis development

As stated earlier, the role of audit opinions as *auditor and audit-related determinants* on ARL has been examined in prior studies (e.g., Whittred, 1980; Bamber et al., 1993; Simnett, Aitken, Choo, & Firth, 1995; Schwartz & Soo, 1996; Soltani, 2002; Leventis et al., 2005). The extant literature has mainly examined the role of this audit factor by testing qualified vs. unqualified audit opinions (e.g., Bamber et al., 1993; Schwartz & Soo, 1996; Soltani, 2002). However, "it is not the only issuing of a qualification, but the type of qualification, that affects audit delay" (Simnett et al., 1995, p.18) and hence requires further studies to add to our knowledge of ARL. Soltani (2002) extends Whittred (1980) and Schwartz and Soo (1996) and examines the impact of institutional features in the French financial reporting setting and also the underlying reasons for issuing qualified opinions ("subject to" or "except to") by classifying the relevant factors into five categories: "scope limitations", "multiple uncertainties", "noncompliance with accounting standards",

"insufficient reserve for employees' retirement" and "other". However, both Whittred (1980) and Soltani (2002) tested this issue just using univariate tests, but not multivariate analysis.[12]

Leventis et al. (2005) examined the role of the number of remarks (i.e., AQPs) in the audit report, but not the types and reasons for the remarks in Greece. Although it seems that the number and type of remarks (AQPs) in qualified audit reports are significant in studies undertaken by Soltani (2002) in France, Chen et al. (2001) in China, Leventis et al. [13] (2005) in Greece and Muñoz-Izquierdo et al. (2019)[14] in Spain, there is little evidence regarding the role of the number and type of AQPs on ARL and, in particular, in other settings in emerging markets such as Iran. In addition, as discussed by HovansianFar (2010) and elaborated on by MohammadRezaei et al. (2016), a number of AQPs can be repeated from the previous fiscal year. However, prior studies have not examined the effect of these issues on ARL. Hence, the present study, by examining the role of the number and nature of AQPs in the context of an emerging market, Iran, where the multitude and the diversity of AQPs are very high (see, MohammadRezaei et al. 2016), can extend prior findings and add to the literature. Furthermore, the present study fills the research gap in relation to the effect of repetitive vs. non-repetitive AQPs on ARL.

The following discusses further the reasons for long ARL by reviewing studies related to "additional audit procedures" in Section 3.1 and "auditor-client negotiations" in Section 3.2, which provides further insight about the potential underlying reasons for long ARL. Then, the study presents three hypotheses in Section 3.3 to test the relationships between the number and type (nature) and the impact of non-repetitive AQPs on ARL.

3.1. Additional audit procedures

Additional audit procedures refer to the audit tests that were not a part of audit programmes. However, the extension is needed to go through the issues that have emerged during the audit fieldwork. One of these issues is intended modification by auditors.[15] In this line, according to auditing standards, when auditors

[12] Since univariate analysis is involved in the analysis of a single variable, the findings from such analysis in the case of testing a multi-dimensional variable like ARL (see, Durand, 2019: Habib et al., 2019) are less likely to lead to reliable findings and inferences.

[13] The descriptive evidence provided by Leventis et al. (2005) shows that the mean of the number of remarks in audit reports in Greece is close to 4.

[14] Munoz-Izquierdo et al. (2019) examined the role of underlying reasons for going-concern audit opinions on bankruptcy.

[15] AS 3015 (Paragraph 4) [PCAPB, 2017], "when an auditor expresses a qualified opinion, he or she should disclose all of the substantive reasons for the qualified opinion in one or more separate paragraph (s)".

issue qualified opinions, the gathered audit evidence must be sufficient and persuasive enough to support the qualification(s). That is, an audit team that has included a material misstatement in its "significant matter report" is more likely to engage in the following procedures: (i) charging audit staff with higher experience to further investigate; (ii) increasing the audit scope; and (iii) obtaining more extensive audit evidence using different techniques in auditing such as substantive procedures or analytical tests. This is because, in the first step and in accordance with International Standard of Auditing (ISA) 705, an auditor should defend their claim against the client firm's manager. In addition, the auditor must extend the audit tests and gather enough and persuasive evidence to respond to shareholders' enquiries at the annual general meeting about the qualification and possible lawsuits (Leventis et al., 2005). These additional audit efforts are more likely to increase the audit fieldwork lag (Bamber et al., 1993; Knechel & Payne, 2001; Leventis et al., 2005). However, there is limited evidence about the possible role of additional audit procedures on ARL in the presence of challenging and non-repetitive AQPs.

3.2. Auditor-client negotiations

In accordance with ISA 705, when the auditor is expected to modify their opinion, they must share the circumstances that would lead to the expected modification and the type of opinion with those charged with the firm's governance bodies. Auditing Standard (AS) No. 15 PCAOB discusses this requirement's advantages, such as: (i) informing the client firm's governance bodies about the intended modification(s) and its reasons (or conditions); and (ii) providing an opportunity to the clients firm's governance bodies to provide further information and clarifications on the item(s) leading to intended modification(s).

The literature suggests that auditor-client negotiations due to accounting matters would more likely result in longer ARL (Durand, 2019). According to literature on ARL, two main groups of metrics which would more likely result in auditor-client negotiations (Salterio, 2012) are: (a) the matters which are related to audit report qualification, (b) the metrics which are not related to the content of audit report, but are related to information embedded in financial statements such as loss reporting or extraordinary items.

Prior studies highlight that both auditors (e.g., Carslaw & Kaplan, 1991; Soltani, 2002) and client firms' managers (Whittred, 1980) have incentives for negotiations in the case of potential audit opinion qualification and that would be severe and time-consuming in the case of accounting problems' occurrence (Leventis et al., 2005). In a similar vein, Carslaw and Kaplan (1991) and Soltani (2002) argue that auditors are likely to be unwilling to issue qualified audit opinions before spending time and having negotiations with the client firm's manager to come up with alternatives, and that they are willing to solve the issue. However, the literature lacks studies examining the potential effect of auditor-client negotiations on ARL in the presence of challenging and non-repetitive AQPs. Hence, the present study addresses this gap.

3.3. Hypothesis development

3.3.1. Number of AQPs and ARL

According to the two last-discussed arguments, Leventis et al. (2005) find that the number of audit remarks is positively associated with ARL. Iranian audit standards are simply a translation of ISA (Roudaki, 2008). Hence, Iranian auditors, before inclusion of one or more AQPs in their audit reports, are more likely to employ additional audit procedures and negotiate with a client firm's manager. In addition, MohammadRezaei and Faraji (2019) state that there are considerable differences between the first draft of an audit report and the final one in the case of Iranian firms. In fact, managers of listed firms in Iran request further time from their auditors to enable them to provide necessary documentation in order to reduce the number of AQPs included in the audit report draft and also negotiate with them to adjust the tone of AQPs that cannot be resolved or removed (Banimahd & Bahari, 2014).

Therefore, an increase in the number of AQPs is predicted to increase the fieldwork lag due to the time needed to discover material misstatements and justify AQPs and to increase the reporting lag due to negotiations between the client and the auditor to reduce the number of AQPs. The first hypothesis is thus expressed as follows:

H_1: An increase in the number of audit qualification paragraphs increases ARL.

3.3.2. AQP types and ARL

The qualified audit opinions can contain a wide range of qualification paragraphs issued for a variety of reasons (Soltani, 2002; MohammadRezaei et al., 2016; Muñoz-Izquierdo et al., 2019), which may play a different role in extending audit procedures and auditor-client negotiations and, consequently, longer ARL. Whittred (1980) provided an interesting study and analysed the distribution of audit qualification by subject matter. However, the study did not test the effect of each type of 'subject matter' (i.e., AQPs) on ARL. Soltani's (2002) descriptive statistics about the average delay for the audit qualification reasons reveal that qualification due to "scope limitation" has the shortest audit delay. However, "multiple uncertainties", "non-conformity with accounting principles" and "insufficient reserve for employees' retirement" seem to be more challenging reasons with longer ARL, respectively (Soltani, 2002).

According to MohammadRezaei et al. (2016) and as noted in the institutional background section, a high percentage of audit reports in Iran are qualified opinions and include a wide range of paragraphs, such as non-recognition of expenses, failure to receive a response to third-party confirmation letters and miscalculation of cost of goods sold. These require proper analysis in terms of their effect on ARL.

Material misstatements in relation to asset evaluations and reserves are likely to result in longer ARL due to their challenging nature, which can result in additional audit procedures, more likely audit-client negotiations and consequently longer ARL. Paragraphs related to non-recognition of expenses (e.g., insufficient reserves for doubtful debts and devaluation of assets) are often a cause of conflict between the auditor and the client due to their impact on the firm's profit and loss and the potential for tax problems (rejection of expenses related to the reserves for asset devaluation by the Tax Administration Organization) when applied by the client (Sajadi & Kazemi, 2016).

The paragraph related to the miscalculation of cost of goods sold is an important and challenging one due to several reasons and also tax implications, which can be very troublesome for the auditors and the client and is likely to result in longer ARL. In addition and more importantly, if the auditor includes this AQP in the report, it is more likely to result in major implications (i.e., an ex officio assessment[16] and the imposition of a heavy tax on the firm by the Tax Administration Organization) (Barzegari & Talebnia, 2014). Hence, due to the potential different effects of each type of AQP on ARL, the second hypothesis is proposed as follows:

H_2: There is a significant relation between the type of audit qualification paragraph and ARL.

3.3.4. AQPs' repetitiveness and ARL

The review of prior studies reveals that there is a lack of studies on the role of repetitive vs. non-repetitive AQPs on ARL. In line with the "additional audit procedures" argument, it is expected that auditors spend less time on including repetitive AQPs than on non-repetitive ones. That is, according to HovansianFar (2010), repetitive paragraphs compared to non-repetitive paragraphs are not time-consuming since the auditors merely paraphrase, reword and, if necessary, adjust the number of the previous year's paragraphs. However, such a scenario could not be imagined for non-repetitive AQPs.

According to the "auditor-client negotiations" argument, compared to non-repetitive AQPs, auditors are less likely to face challenging and time-consuming negotiations in the case of repetitive AQPs. As discussed by Malekian (2000), if repetitive AQPs are less likely to result in considerable attention and pressure from the shareholders, the management does not engage in serious negotiations with the auditor. However, since shareholders are sensitive in relation to the inclusion of non-repetitive (new) AQPs, this is more likely to lead to challenging annual general meetings and the risk of change in the client firm's manager. Hence, the manager has stronger incentives to negotiate with the auditor to remove, reduce or adjust the tone of the non-repetitive AQPs. Therefore, the third hypothesis is proposed as follows:

[16] When establishing the actual income of the taxpayer is impossible, taxable income is determined through ex officio assessment.

H_3: An increase in the number of non-repetitive audit qualification paragraphs increases ARL.

4. Research methods

4.1. Sample

Table 1 presents sample selection procedures. The data for all the variables were manually collected from the financial statements of firms listed on the Tehran Stock Exchange (TSE) between 2011 and 2016. Financial statements and audit reports were obtained from the Comprehensive Database of All Listed Companies (CODAL)[17]. All audit reports were carefully reviewed by one of the researchers, the content of the paragraphs was analysed entirely manually. The data were verified by the other co-authors. A total of 2,136 firm-year observations were reviewed, of which 188 were excluded as they were related to delisted firms. 302 firm-year observations were excluded, as they were related to financial institutions, such as banks, insurance companies, and investment and holding companies. In addition, 203 firm-year observations were removed due to incomplete information about audit report variables, lack of or incomplete information about the research variables, or being adverse opinions or disclaimers of opinions (which was very rare). Following implementation of the aforementioned exclusions, 1,443 observations remained for analysis, which contained 532 (37%) and 911 (63%) firm-year observations with unqualified and qualified opinions, respectively.[18]

We focus more on qualified opinions because we are examining the number, type and repetitiveness of AQPs. Consistent with prior studies from an Iranian setting, the reason for selecting the period 2011 to 2016 is that economic crises and sanctions against Iran have become much more serious since 2011, resulting in a situation that is incomparable to the period before 2011. During this period, severe economic sanctions led to a sharp increase in the exchange rate between the Iranian rial and the U.S. dollar (about a three times increase in the exchange rate). In addition, the research ends in 2016 because the "Guidelines for Setting Audit Fees" were introduced by the IACPA in 2016. These guidelines, which are updated annually, stipulate that auditors must determine audit fees based on their budgets and the hourly fee rates for different categories of employees. Hence, this regulation is likely to affect the audit budget and effort and finally ARL, which is beyond the scope of this study. However, in the robustness test section, we re-examine the research hypotheses using an extended period, from 2011 to 2019, to find out whether our main findings are consistent for the more updated period.

Table 1

[17] https://www.codal.ir.

[18] MohammadRezaei et al. (2018) reported that 60% of audit opinions are qualified in Iran.

Sample selection procedure

Description	Firm-Years
Total number of observations for the studied period (2011-2016)	2136
Excluding:	
Observations related to delisted firms	(188)
Financial institutions	(302)
Observations with unavailable data	(203)
Total number of observations	1,443
Subsample A: Qualified opinion observations	911
Subsample B: Unqualified opinion observations	532

Table 2 shows the number, type, and repetitiveness of common AQPs for 191 firms with a qualified audit opinion from 2011 to 2016 (911 unbalanced firm-year observations[19]). Panel A in this table presents the frequency of AQPs by type and for each year. The non-recognition of expenses paragraph (which includes several similar paragraphs, such as insufficient reserves for income tax, insufficient reserves for doubtful debts, insufficient reserves for devaluation of inventories, insufficient reserves for devaluation of assets, and other incurred expenses) has the highest frequency in every year. The next most frequent paragraph is related to the failure to receive a response to third-party confirmation letters. The paragraph related to the miscalculation of cost of goods sold is one of the most challenging paragraphs and accounts for about 8% of all the AQPs issued by auditors. The descriptive statistics provided in Panel A are similar to those provided by MohammadRezaei et al. (2016).[20]

Table 2

Descriptive statistics of AQPs issued between 2011 and 2016

Panel A: Number and type of AQPs between 2011 and 2016

Year	2011	2012	2013	2014	2015	2016	Total

[19] It should be noted that, due to panel unbalance, the number of firms with qualified opinions is 191, since in some years firms have received a qualified opinion and in some other years an unqualified opinion.

[20] MohammadRezaei et al.'s (2016) study in Iran reported that audit opinion modification due to going concern is very low. Indeed, only 1.34% of the underlying reason for audit opinion modification was due to going concern. That is because, according to the trade law in Iran and if the client firm is subject to Article 141 Trade Law as bankrupt, the auditors are required to discuss that in a paragraph after the audit opinion paragraph.

AQP Types	N = 152		N = 162		N = 159		N = 146		N = 155		N = 137		N = 911	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Non-recognition of expenses	274	54.58	279	55.03	283	55.27	269	55.01	299	56.10	284	59.04	1688	55.82
Failure to receive a response to third-party confirmation letters	79	15.74	75	14.79	81	15.82	76	15.54	71	13.32	62	12.89	444	14.68
Miscalculation of cost of goods sold	44	8.76	47	9.27	32	6.25	34	6.95	45	8.44	29	6.03	231	7.64
Contingent liabilities	16	3.19	23	4.54	26	5.08	28	5.73	29	5.44	24	4.99	146	4.83
Misclassification of accounting numbers in financial statements	26	5.18	19	3.75	18	3.52	18	3.68	19	3.56	18	3.74	118	3.90
Noncompliance with accounting standards 19 & 20	16	3.19	13	2.56	18	3.52	17	3.48	16	3.00	22	4.57	102	3.37
Other	47	9.36	51	10.06	54	10.55	47	9.61	54	10.13	42	8.73	295	9.76
Total	502	100	507	100	512	100	489	100	533	100	481	100	3024	100

Panel B: Repetitive vs. non-repetitive AQPs

Year	2011		2012		2013		2014		2015		2016		Total	
	N = 152		N = 162		N = 159		N = 146		N = 155		N = 137		N = 911	
AQP Repetitiveness	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Repetitive AQPs	327	65.14	339	66.86	352	68.75	354	72.39	358	67.17	327	67.98	2057	68.02
Non-repetitive AQPs	175	34.86	168	33.14	160	31.25	135	27.61	175	32.83	154	32.02	967	31.98
Total AQPs	502	100	507	100	512	100	489	100	533	100	481	100	3024	100
Observations with only repetitive AQPs	54	35.53	62	38.27	65	40.88	64	43.84	46	29.68	45	32.85	336	36.88
Observations with only non-repetitive AQPs	18	11.84	21	12.96	13	8.18	8	5.48	18	11.61	12	8.76	90	9.88
Observations with both repetitive and	80	52.63	79	48.77	81	50.94	74	50.68	91	58.71	80	58.39	485	53.24

non-repetitive AQPs														
Total number of observations	152	100	162	100	159	100	146	100	155	100	137	100	911	100

Panel B in Table 2 shows that repetitive AQPs account for about 68% of all AQPs. Moreover, observations with non-repetitive AQPs have the lowest frequency (9.8% on average), while observations with both repetitive and non-repetitive AQPs have the highest frequency (53% on average). These statistics indicate the high level of AQP repetitiveness in Iran.

In general, given the somewhat different research setting in Iran, which is characterised by a low demand for quality audits at least by main players, insufficient resources (low audit fees) used by auditors to perform audits (HovansianFar, 2010), a lack of strong incentives for client firms to resolve repetitive paragraphs from previous years (Malekian, 2000), regulatory constraints enforced in the tax law, and the challenging nature of non-repetitive AQPs (Barzegari & Talebnia, 2014), it can be stated that a large number of observations have both repetitive and non-repetitive AQPs, and a smaller number of observations have only non-repetitive AQPs.

4.2. Model specification

Based on prior research (e.g., Knechel & Sharma, 2012; MohammadRezaei & Mohd-Saleh, 2018), the following three models were used to test the hypotheses. Model 1 examines the relationship between the number of AQPs and ARL (H_1), Model 2 examines the relationship between AQP types and ARL (H_2), and Model 3 examines the relationship between the repetitiveness of AQPs (repetitive vs. non-repetitive) and ARL (H_3).

$$\begin{aligned} LogARL_{it} \text{ or } ARL_{it} = {} & \beta_0 + \beta_1 PargphNum_{it} + \beta_2 AudPvt_{it} + \beta_3 AudChg_{it} + \beta_4 Busy_{it} \\ & + \beta_5 Size_{it} + \beta_6 Lev_{it} + \beta_7 Liq_{it} + \beta_8 Loss_{it} + \beta_9 Subs_{it} \\ & + \beta_{10} LogAge_{it} + \beta_{11} OwnCon_{it} + \beta_{12} NStOwn_{it} \\ & + \sum \beta_j IndustryDum + \sum \beta_j YearDum + \varepsilon_{it} \end{aligned} \quad (1)$$

$$LogARL_{it} \text{ or } ARL_{it} = \beta_0 + \beta_1 \ TNRecExpPargph_{it} + \beta_2 ConfLetPargph_{it} \quad (2)$$

$$+ \beta_3 CGSoldPargph_{it} + \beta_4 ConLiabPargph_{it} + \beta_5 MisclasPargph_{it}$$
$$+ \beta_6 NConfPargph_{it} + \beta_7 OtherPargph_{it} + \beta_8 AudPvt_{it} + \beta_9 AudChg_{it}$$
$$+ \beta_{10} Busy_{it} + \beta_{11} Size_{it} + \beta_{12} Lev_{it} + \beta_{13} Liq_{it} + \beta_{14} Loss_{it} + \beta_{15} Subs_{it}$$
$$+ \beta_{16} LogAge_{it} + \beta_{17} OwnCon_{it} + \beta_{18} NStOwn_{it} + \sum \beta_j IndustryDum$$
$$+ \sum \beta_j YearDum + \varepsilon_{it}$$

$$LogARL_{it} \text{ or } ARL_{it} = \beta_0 + \beta_1 RepPargphNum_{it} + \beta_2 NRepPargphNum_{it} + \beta_3 AudPvt_{it} \quad (3)$$
$$+ \beta_4 AudChg_{it} + \beta_5 Busy_{it} + \beta_6 Size_{it} + \beta_7 Lev_{it} + \beta_8 Liq_{it} + \beta_9 Loss_{it}$$
$$+ \beta_{10} Subs_{it} + \beta_{11} LogAge_{it} + \beta_{12} OwnCon_{it} + \beta_{13} NStOwn_{it}$$
$$+ \sum \beta_j IndustryDum + \sum \beta_j YearDum + \varepsilon_{it}$$

All variables are defined in Appendix A. The main coefficient of interest in Model 1 is β_1, which is predicted to be significant and positive. Coefficients of interest in Model 2 are β_1 to β_7, which are expected to be significant and positive. In Model 3, the β_2 coefficient of interest is expected to be significant and positive. All the independent variables in these models were measured based on the number of paragraphs within the audit report. The institutional background section and Appendix A provide explanations about the type and content of each paragraph. For example, the variable *TNRecExpPargph* denotes non-recognition of expenses, such as insufficient reserves for doubtful debts, income tax, devaluation of inventories, and devaluation of assets as well as other incurred but unrecorded expenses. Regarding variables *RepPargphNum* and *NRepPargphNum*, the reports of the current and the previous year were compared to count the number of repetitive vs. non-repetitive paragraphs. The dependent variable of the model, ARL, was measured as the number of days between the fiscal year-end date and the initial audit report date, following Jaggi and Tsui (1999) and Knechel and Sharma (2012). Two approaches were used consistent with prior research. First, the natural logarithm of ARL and then its actual value were used in the model. In sensitivity tests, this variable was divided into long- and short-ARL observations based on the median ARL, and the model was estimated again as a logit regression to examine the relationship between each independent variable and the probability of ARL.

4.3. Control Variables

Following the theoretical framework and prior research (e.g., MohammadRezaei & Mohd-Saleh, 2018; Durand, 2019), the effect of key client and auditor attributes on ARL was controlled in the above regression models. These include auditor change (*AudChg*), busy season (*Busy*), firm size (*Size*), leverage (*Lev*), current ratio (*Liq*), loss indicator (*Loss*), client's subsidiaries (*Subs*), and firm age (*LogAge*). In addition, given the unique context of Iran, some important attributes, such as ownership concentration (*OwnCon*) and ownership type (*NStOwn*) (state vs. private ownership), were controlled. Additionally, due to the lack of international audit firms operating in Iran, the type of auditors was controlled as state vs. private auditors (*AudPvt*) (MohammadRezaei & Mohd-Saleh, 2018). Research and development costs and non-audit fees in Iran are uncommon. Moreover, despite the existence of standards for the reporting and disclosure of business segments, firms do not feel obligated to follow them. Consequently, some variables that had been used in prior research, such as Big- 4 accounting firms, foreign investment, non-audit fees, R&D costs and the number of business segments, were not included in the models due to the unique Iranian audit and financial reporting environment (MohammadRezaei, Mohd-Saleh & Ahmed, 2018). Following prior research, year and industry effects were controlled and models were estimated using Ordinary Least Squares (OLS) with robust standard errors (errors clustered by firm).[21]

5. Results

5.1. Descriptive Statistics

[21] In relation to auditor-level variables, we have controlled two variables, auditor type (*AudPvt*) and auditor change (*AudChg*), in our regression models. In addition, audit opinion (AQPs) is our independent variable. Moreover, audit fee is not available for all listed firms (see, MohammadRezaei & Mohd-Saleh, 2018). In addition, MohammadRezaei and Mohd-Saleh (2018) examine the role of audit fees (as the additional explanatory variable in the additional tests section) on ARL and find an insignificant relation. This is the case because the disclosure of audit fees in Iran is not mandatory and less than half of listed firms disclose it separately in 'general administrative and selling expenses'. Such an issue is likely to result in sample selection bias. In addition, in Iran, the audit fee is determined in the last year's annual general meeting and consequently is less likely to be associated with audit effort (ARL). In relation to corporate governance variables, Mashyekhi and Mashayekh (2008) and MohammadRezaei et al. (2012) argue that ownership concentration (*ConOwn*) and ownership type (state vs non-state) play main roles in the controlling of the firms. Hence, MohammadRezaei and Mohd-Saleh (2018) have included just these two corporate governance variables in their models. Moreover, in the additional tests section, the authors test the role of board independence on ARL (since the data for board independence are not available for all firms) and find an insignificant relation. Furthermore, the insignificant role of board independence in the Iranian setting has been documented by Rezaee et al. (2020). Moreover, the audit committee requirement has only recently been enforced for firms listed on the TSE.

Panels A, B and C in Table 3 present descriptive statistics of the variables as well as bivariate analysis results. All data were winsorised at 1% and 99% levels to control for the effect of outliers. In Panel A, a mean ARL of about 80 days, with a maximum of 145 days and a minimum of 27 days, is reported, which is consistent with MohammadRezaei and Mohd-Saleh (2018) on ARL in Iranian firms. According to Mirshekary and Saudagaran (2005), one of the reasons for long ARLs in Iran is the tax and trade laws that give firms four months to disclose their financial statements. The mean for concentrated ownership is about 51%, indicating the high level of ownership concentration in Iran due to weak shareholder protection laws, and many of these firms are state-owned (Mashayekhi & Mashayekh, 2008). Due to the high ownership concentration, these firms have a low level of information asymmetry and, as a result, high ARL is not a major issue for controlling shareholders. According to Faraji, Kashanipour, MohammadRezaei, Ahmed and Vatanparast (2020) and Moayedi and Aminfard (2012), there is evidence that the financing system in Iran is close to a credit-insider system, and, as such, Iranian firms have high leverage (about 64%) due to their focus on cheap financing from banks with an almost fixed interest rate.

The results of bivariate analysis with different classifications are provided in panels B and C. In Panel B, firms are classified into long and short ARL groups based on median ARL and the research variables comparatively examined for total observations and for observations with qualified opinion. The average numbers of AQPs in both total sample and qualified opinion sample categories are significantly higher for firms with long ARL than for those with short ARL, which supports the first hypothesis. In terms of AQP types, both in total sample and qualified opinion sample categories, there is a significant difference ($p<0.01$) between the long-ARL and short-ARL groups in mean values for the non-recognition of expenses paragraph. There is also a significant difference between these two groups in mean values for paragraphs related to third-party confirmation and miscalculation of cost of goods sold ($p<0.01$).

Overall, the mean and the frequency of these paragraphs are higher in long-ARL observations, which is consistent with the second hypothesis. There is a significant ($p<0.01$) difference between the two groups in contingent liabilities and misclassification of accounting numbers in financial statements, but only in the total sample, and, in both groups, these paragraphs have a low frequency. In terms of the non-compliance with accounting standards (standards 19 and 20 in the Iranian National Accounting Standards about subsidiaries and consolidated financial statement requirements) paragraphs, there is a significant difference between long-ARL and short ARL-groups, but these paragraphs constitute a small part of the total observations in each group. In the qualified opinion sample, the average number of non-repetitive AQPs in long-ARL firms is significantly higher than that in short-ARL firms. However, there is no significant difference between these groups in the number of repetitive paragraphs. These findings support the third hypothesis. Short-ARL firms use the services of more private auditors, which is consistent with the findings

of MohammadRezaei and Mohd-Saleh (2018), and there is a significant difference between the two groups in the total sample, but no significant difference is observed in the qualified opinion sample. Furthermore, there is no significant difference between the two groups in auditor change. Moreover, long-ARL firms mostly belong to the private rather than the public sector (state and semi-state-owned firms). In both total sample and qualified opinion sample categories, leverage, subsidiary firms, age and loss (liquidity and ownership concentration) are higher for long-ARL (short-ARL) firms.

In Panel C of Table 3, firms are classified into two categories based on the median of observations: numerous-AQP (three qualification paragraphs or more) and few-AQP (two qualification paragraphs or less). As can be seen, ARL in numerous-AQP firms is approximately 11 days longer than in few-AQP firms, which is consistent with the first hypothesis. The average number of paragraphs related to non-recognition of expenses in numerous-AQP firms is twice as much as in few-AQP firms. In addition, the frequency of AQPs other than the non-recognition of expenses is also higher in numerous-AQP firms than in few-AQP firms. Leverage, loss, subsidiary firms and client firm's age (liquidity) are higher (lower) in numerous-AQP firms than in few-AQP firms. In another part of Panel C, qualified and unqualified observations are compared. The mean ARL of firms with a qualified opinion is longer (about 22 days) than that of firms with an unqualified opinion, which is consistent with Bamber et al. (1993) and Soltani (2002). In addition, size, leverage, subsidiaries, loss, age and private ownership are significantly higher for firms with a qualified opinion than for those with an unqualified opinion. Liquidity, private auditor and ownership concentration are significantly lower in firms with a qualified opinion than in those with an unqualified opinion.

Untabulated results related to correlations among the variables show that none of the pairwise correlations of the research variables surpass 0.60. Moreover, the results related to the variance inflation factor (VIF) indicate that it does not exceed the threshold of 10. The highest VIF for models 1 and 2 is for Lev and Size variables (1.77 and 1.88). The highest VIF for Model 3 is for the Lev variable (1.89). Therefore, multicollinearity is not a major concern.

Table 3

Descriptive statistics

Panel A: Descriptive Statistics of Variables (n= 1443)

Variables	Mean	1st quartile	Median	3rd quartile	Std. dev.	Maximum	Minimum
ARL	80.61	56	85	104	27.27	145	27

LogARL	4.32	4.02	4.44	4.64	0.38	4.98	3.29
Size	14.01	12.86	13.87	14.86	1.64	18.38	10.53
Lev	0.64	0.45	0.61	0.76	0.30	1.98	0.13
Liq	1.38	0.89	1.2	1.61	0.85	5.37	0.17
LogAge	3.43	3.09	3.61	3.87	0.53	4.14	1.79
OwnCon	0.51	0.36	0.51	0.67	0.22	0.99	0.08
AudPvt	0.88	1	1	1	0.32	1	0
AudChg	0.28	0	0	1	0.45	1	0
Busy	0.80	1	1	1	0.40	1	0
Loss	0.18	0	0	1	0.38	1	0
Subs	0.39	0	0	1	0.49	1	0
NStOwn	0.36	0	0	1	0.48	1	0

Panel B: Bivariate Analysis

	Total Sample (n= 1443)			**Qualified Opinion Sample (n=911)**		
Variables	**Long ARL**	**Short ARL**	**t-value / chi-square**	**Long ARL**	**Short ARL**	**t-value / chi-square**
PargphNum	2.88	1.35	14.05***	3.67	2.85	6.78***
RepPargphNum				2.25	2.27	0.12
NRepPargphNum				1.42	0.58	12.27***
TNRecExpPargph	1.55	0.79	10.92***	1.98	1.66	3.74***
ConfLetPargph	304	103	95.92***	290	154	19.23***
CGSoldPargph	167	64	59.02***	162	69	18.81***
ConLiabPargph	99	47	22.65***	91	55	1.36
MisclasPargph	79	39	16.31***	76	42	2.31
NConfPargph	80	22	37.62***	75	27	11.42***
OtherPargph	199	95	52.69***	189	104	8.83**
AudPvt	606	672	13.16**	431	315	0.057
AudChg	193	217	0.97	149	99	0.63

Busy	549	601	4.40**	399	324	11.04***
Size	14.05	13.96	1.08	14.19	14.16	0.25
Lev	0.71	0.57	8.24***	0.74	0.62	5.21***
Liq	1.21	1.54	7.41***	1.12	1.31	-4.30***
Loss	182	75	58.82***	153	53	17.83***
Subs	345	228	46.64***	285	140	27.37***
LogAge	3.52	3.35	6.25***	3.56	3.39	5.48***
OwnCon	0.47	0.56	-7.79***	0.46	0.55	-6.33***
NStOwn	345	187	83.27***	283	156	14.72***

Panel C: Bivariate Analysis

	Qualified Opinion Sample (n=911)			**Total Sample (n= 1443)**		
Variables	**Numerous AQP (n=360)**	**Few AQP (n=551)**	**t-value / chi-square**	**Qualified opinion (n=911)**	**Unqualified opinion (n=532)**	**t-value / chi-square**
ARL	95.64	84.20	7.17***	88.72	66.73	16.03***
TNRecExpPargph	3.32	1.35	25.68***			
ConfLetPargph	260	184	131.39**			
CGSoldPargph	157	74	104.790***			
ConLiabPargph	90	56	35.61***			
MisclasPargph	93	25	87.58***			
NConfPargph	60	42	17.91***			
OtherPargph	157	136	36.20***			
AudPvt	291	455	0.44	746	481	-108.79***
AudChg	96	152	0.09	248	162	1.72
Busy	285	438	0.01	723	427	0.16
Size	14.17	14.18	-0.09	14.17	13.71	5.17***
Lev	0.79	0.63	6.44***	0.69	0.56	8.22***
Liq	1.14	1.24	-2.25**	1.20	1.67	10.58***
Loss	141	65	94.01***	206	51	38.93***

Subs	184	241	4.64**	425	148	49.75***
LogAge	3.55	3.45	3.25***	3.49	3.33	5.60***
OwnCon	0.49	0.51	1.628	0.50	0.58	-1.88*
NStOwn	175	264	0.04	439	93	136.07***

*, ** and *** denote significance at the 0.10, 0.05 and 0.01 levels respectively.

5.2. Multivariate Analysis

Tables 4, 5 and 6 present the results of regression analysis using the OLS with standard errors clustered by firm. Table 4 shows the results of estimating the first model (H_1) using the two approaches to measuring the dependent variable (*ARL* and *LogARL*). Consistent with the first hypothesis, the results show that there is a significant positive relationship between the number of AQPs and ARL. In other words, as the number of AQPs increases, audit fieldwork is prolonged (additional audit procedures), and more time is required for negotiations between the client and the auditor. Such a finding is consistent with Leventis et al. (2005), who find that the number of audit remarks (i.e., AQPs) is positively associated with ARL in Greece.

The results also show that there is a significant negative relationship between ownership concentration and ARL. In other words, higher ownership concentration reduces ARL, which is mainly due to lower demand for dissemination of annual reports due to lower agency costs of these firms (Bamber et al., 1993). Consistent with MohammadRezaei and Mohd-Saleh (2018), private ownership is positively related to ARL. Moreover, there is a significant positive relationship between leverage and ARL, which is consistent with the arguments in Durand (2019). Consistent with Jaggi and Tsui (1999), the results in Table 4 indicate that the presence of client subsidiaries increases the number of audit reviews, thus leading to longer ARL. Consistent with Bamber et al. (1993) and Habib et al. (2019), our findings reveal longer ARL for firms with negative earnings (loss) since there is a higher level of audit risk in auditing such firms. Audit busy season is negative and insignificant (significant) in tables 4 and 6 (5). Such findings are consistent with MohammadRezaei and Mohd-Saleh (2018)[22].

Table 4

Multivariate analysis of the relationship between number of AQPs and ARL (H1) – Model 1

Variables	Dependent variable: *ARL*	Dependent variable: *LogARL*

[22] MohammadRezaei and Mohd-Saleh (2018) employ several sensitivity tests for such an unexpected finding and reveal that the finding is not sensitive to alternative definition and tests.

	Expected sign	Coefficient	t-stat	Coefficient	t-stat
Intercept		66.32***	3.47	4.15***	15.02
PargphNum	+	10.02***	5.59	0.14***	5.55
AudPvt	-	-1.37	-0.34	-0.02	-0.40
AudChg	+	0.09	0.08	0.01	0.15
Busy	+/-	-3.75	-1.28	-0.05	-1.25
Size	+	0.28	0.30	0.01	0.22
Lev	+	8.99***	2.56	0.13***	2.55
Liq	-	-1.19	-0.85	-0.01	-0.37
Loss	+	7.38***	3.30	0.09***	3.15
Subs	+	5.36**	2.23	0.08**	2.40
LogAge	+/-	3.71	1.45	0.05	1.35
OwnCon	-	-17.36***	-3.28	-0.24***	-3.13
NStOwn	+	10.07***	4.36	0.15***	4.67
IndustryDum		Yes		Yes	
YearDum		Yes		Yes	
Adjusted R^2		0.32		0.31	
F-stat		11.97***		10.21**	
N		1443		1443	

*, ** and *** denote significance at the 0.10, 0.05 and 0.01 levels respectively.

In Table 5, the relationship between AQP type and ARL is presented (Model 2). Consistent with the second hypothesis, the results reveal that some types of AQP significantly increase ARL. In other words, there is a significant positive relationship between AQPs related to non-recognition of expenses, failure to receive a response to third-party confirmation letters, miscalculation of cost of goods sold and contingent liabilities and ARL. As noted earlier, these paragraphs can restrict the audit process, create uncertainty and lead to tax litigations against the firm and are thus very challenging. In other words, challenging AQPs is more likely to result in additional audit effort and time and time-consuming auditor-client negotiations. AQP is associated with non-compliance with accounting standards (standards 19 and 20 in the Iranian National Accounting Standards about subsidiaries and consolidated financial statements) and other

paragraphs have a significant relationship with ARL (at 90% confidence level). The paragraph related to the misclassification of accounts in financial statements is not significantly associated with ARL. Such a finding is likely to be attributable to the fact that auditors normally must check and review financial statements in terms of classification and disclosure according to accounting standards. Hence, the misclassification of accounting numbers in financial statements is discovered in a normal audit procedure and a client firm's manager is less likely to seriously negotiate with the auditor about such paragraphs since they are not challenging and critical. Such findings for the first time shed light on the different role of AQPs, due to different reasons, in ARL. Soltani (2002), in a descriptive analysis, shows that ARLs vary for different reasons for qualified audit opinions.

Table 5

Multivariate analysis of the relationship between AQP type and ARL (H_2) – Model 2

		Dependent variable: *ARL*		Dependent variable: *LogARL*	
Variables	Expected sign	Coefficient	t-stat	Coefficient	t-stat
Intercept		66.44***	5.98	4.16***	26.96
TNRecExpPargph	+	3.19***	5.70	0.05***	6.23
ConfLetPargph	+	3.70**	2.43	0.05**	2.26
CGSoldPargph	+	5.03***	2.66	0.05**	2.14
ConLiabPargph	+	4.06**	2.04	0.04*	1.65
MisclasPargph	+	-0.27	-0.12	-0.01	-0.22
NConfPargph	+	3.19*	1.48	0.05*	1.83
OtherPargph	+	2.85*	1.78	0.04*	1.83
AudPvt	-	-1.47	-0.64	-0.02	-0.73
AudChg	+	0.06	0.04	0.01	0.10
Size	+	-0.04	-0.08	0.01	0.47
Lev	+	8.44***	3.06	0.12***	3.21
Busy	+/-	-3.58**	-2.18	-0.05**	-2.30
Liq	-	-1.22	-1.36	-0.01	-0.61
Loss	+	7.14***	3.86	0.09***	3.82
Subs	+	5.34***	3.88	0.08***	4.17
LogAge	-/+	3.53***	2.49	0.05**	2.39
OwnCon	-	-17.51***	-6.01	-0.24***	-5.79

NStOwn	+	9.91***	7.21	0.15***	7.98
IndustryDum		Yes		Yes	
YearDum		Yes		Yes	
Adjusted R^2		0.33		0.32	
F-stat		27.14***		24.08***	
N		1443		1443	

*, ** and *** denote significance at the 0.10, 0.05 and 0.01 levels respectively.

Table 6 presents the results of regression analysis for Model 3 (H3) using observations only with a qualified opinion. Consistent with the third hypothesis, the results show that ARL increases as non-repetitive AQPs increase. Such findings indicate that non-repetitive AQPs are new and require discovery and documentation by the auditor (fieldwork lag) as well as negotiation between the auditor and the client, and, the higher the number of non-repetitive AQPs, the longer the ARL. However, there is no significant relationship between repetitive AQPs and ARL. Finally, Table 6 reveals that, with the occurrence of one non-repetitive AQP, ARL increases about 7 days.

Table 6

Multivariate analysis of the relationship between repetitive and non-repetitive AQPs and ARL (H3) – Model 3

		Dependent variable: *ARL*		Dependent variable: *LogARL*	
Variables	Expected sign	Coefficient	T - stat	Coefficient	T - stat
Intercept		71.49***	3.38	4.19***	14.03
RepPargphNum	?	0.77	1.06	0.01	0.89
NRepPargphNum	+	6.80***	7.86	0.08***	7.30
AudPvt	-	0.86	0.21	0.02	0.30
AudChg	+	-0.60	-0.46	-0.01	-0.62
Busy	+/-	-3.73	-1.19	-0.06	-1.42
Size	+	0.17	0.18	0.01	0.09
Lev	+	5.62*	1.68	0.08*	1.77
Liq	-	-4.02**	-2.00	-0.05*	-1.71

Loss	+	2.45	1.09	0.02	0.71
Subs	+	3.47	1.33	0.05	1.43
LogAge	+/-	9.29***	2.99	0.13***	2.76
OwnCon	-	-12.96**	-2.32	-0.17**	-2.23
NStown	+	7.30***	2.81	0.11***	2.99
IndustryDum		Yes		Yes	
YearDum		Yes		Yes	
Adjusted R^2		0.32		0.31	
F-stat		8.07***		6.82**	
N		911		911	

*, ** and *** denote significance at the 0.10, 0.05 and 0.01 levels respectively.

5.3. Robustness Tests

5.3.1. Examining the two main categories of qualifications

"Modified audit opinions in Iran can be classified under the two best-known and broadest groups of reasons, namely (i) scope limitation and (ii) departure from accounting standards" (MohammadRezaei et al., 2016, p.93). Whittred (1980) states that scope limitation and departure from accounting standards can play different roles in ARL. In other words, departure from accounting standards can be much simpler than AQPs resulting from changes in the client's circumstances. That is, departure from accounting standards plays a lesser role in the ARL than the AQPs due to scope limitation. In line with Whittred (1980), Soltani (2002) states that non-compliance with accounting standards is considered as the least severe type of departure from a unqualified audit report. In addition, the findings of Leventis et al. (2005) show that uncertainty in the audit report has a positive relationship with ARL.

From the perspective of the two developed arguments, "additional audit efforts" and "negotiation between clients and auditors", scope limitation and uncertainty are more challenging because the auditor is likely to be ambiguous concerning whether or not they have enough materiality to be included in the audit report. Furthermore, scope limitation and uncertainty are more likely to take additional time for the auditor to negotiate with the client because the client's management is less likely to accept the auditor's argument about scope limitation and uncertainty

compared to the departure from accounting standards. In other words, in departure from accounting standards, the amount and subject matter of AQPs are specified, and, based on the materiality, the management of a client firm is more likely to agree with the auditor that the departure should be included in the audit report. However, in the case of the scope limitation and uncertainty, because the amount of AQPs is not specified, it is difficult for the client firm's management to accept their inclusion in the audit report. Therefore, we predict that, according to Whittred (1980), Soltani (2002) and Leventis et al. (2005), AQPs due to scope limitation and uncertainty (*Scope*) will result in longer ARL compared to that of the departure from accounting standards (*AccStandD*). The results reported in Table 7 reveal that both underlying reasons have a positive effect on ARL and, consistent with our prediction, AQPs due to scope limitation and uncertainty result in longer ARL than those due to the departure from accounting standards.

Table 7

Multivariate analysis of the relationship between departure and limitation paragraphs and ARL

Variables	Expected sign	Dependent variable: *ARL*		Dependent variable: *LogARL*	
		Coefficient	t-stat	Coefficient	t-stat
Intercept		71.82***	3.57	4.24***	14.61
AccStandD	+	2.93***	4.03	0.04***	4.22
Scope	+	3.82***	4.50	0.05***	4.36
Control Variables		Yes		Yes	
IndustryDum		Yes		Yes	
YearDum		Yes		Yes	
Adjusted R^2		0.31		0.31	
F-stat		22.95***		9.63***	
N		1443		1443	

*, ** and *** denote significance at the 0.10, 0.05 and 0.01 levels respectively.

5.3.2. Extended time period of the research

Due to the "Guidelines for Setting Audit Fees" being introduced by the IACPA in 2016, the research period ends in 2016. However, there is a concern that our main findings are somewhat outdated

and less likely to be generalisable to the time period following 2016. To mitigate this concern, we have added data for 2017 to 2019 (614 firm-years) into our sample. It should be noted that this guideline could change the audit efforts, but, in order to ensure that our results are robust, we re-examine the hypotheses using data (2,057 firm-years) from 2011 to 2019. Tables 8, 9 and 10 show that the main findings are robust to this time period. Such findings reveal that, in contrast to the regulator's expectation, the audit fee regulation is less likely to affect audit effort (ARL). Considering the consequences of the regulation is beyond the scope of this study.

Table 8

Multivariate analysis of the relationship between number of AQPs and ARL (H1) – Model 1 in time period: 2011 - 2019

Variables	Expected sign	Dependent variable: *ARL*		Dependent variable: *LogARL*	
		Coefficient	t-stat	Coefficient	t-stat
Intercept		96.29***	4.91	4.46***	15.81
PargphNum	+	11.18***	6.77	0.15***	6.77
AudPvt	-	-1.53	-0.39	-0.02	-0.40
AudChg	+	0.09	0.10	0.01	0.03
Busy	+/-	-3.68	-1.23	-0.05	-1.19
Size	+	0.42	0.48	0.01	0.59
Lev	+	9.25**	3.09	0.12**	3.09
Liq	-	0.20	0.17	0.01	0.50
Loss	+	6.64**	3.02	0.09**	3.10
Subs	+	5.43**	2.25	0.08**	2.43
LogAge	+/-	1.51	0.58	0.02	0.55
OwnCon	-	-19.37***	-3.83	-0.27***	-3.72
NStOwn	+	11.33***	5.29	0.17***	5.68
IndustryDum		Yes		Yes	
YearDum		Yes		Yes	
Adjusted R^2		0.32		0.31	
F-stat		13.92***		12.05***	

N	2057	2057

*, ** and *** denote significance at the 0.10, 0.05 and 0.01 levels respectively.

Table 9

Multivariate analysis of the relationship between AQP type and ARL (H_2) – Model 2 in time period: 2011 - 2019

		Dependent variable: *ARL*		Dependent variable: *LogARL*	
Variables	Expected sign	Coefficient	t-stat	Coefficient	t-stat
Intercept		59.02***	5.91	4.03***	29.05
TNRecExpParghp	+	2.99***	5.51	0.04***	6.13
ConfLetParghp	+	4.06**	2.80	0.05**	2.49
CGSoldParghp	+	4.99**	2.88	0.05**	2.39
ConLiabParghp	+	4.22**	2.45	0.04**	2.06
MisclasParghp	+	0. 92	0.41	0.01	0.41
NConfParghp	+	4.69**	2.57	0.06**	2.70
OtherParghp	+	5.70***	3.99	0.08***	4.32
AudPvt	-	-1.69	-0.78	-0.02	-0.72
AudChg	+	-0.26	-0.21	-0.01	-0.26
Size	+	0.43	0.91	0.01	1.03
Lev	+	8.56***	3.70	0.12***	3.94
Busy	+/-	-3.99**	-2.60	-0.06**	-2.56
Liq	-	0.29	0.38	0.01	0.85
Loss	+	7.56***	4.43	0.10***	4.55
Subs	+	5.45***	4.32	0.08***	4.72
LogAge	+/-	1.49	1.20	0.02	1.08
OwnCon	-	-18.67***	-7.20	-0.26***	-7.23
NStOwn	+	11.01***	8.91	0.17***	9.96
IndustryDum		Yes		Yes	
YearDum		Yes		Yes	
Adjusted R^2		0.31		0.31	

F-stat	31. 06***	28.69***
N	2057	2057

*, ** and *** denote significance at the 0.10, 0.05 and 0.01 levels respectively.

Table 10

Multivariate analysis of the relationship between repetitive and non-repetitive AQPs and ARL (H3) – Model 3 in time period: 2011 - 2019

		Dependent variable: *ARL*		Dependent variable: *LogARL*	
Variables	Expected sign	Coefficient	T - stat	Coefficient	T - stat
Intercept		63.27***	4.94	4.05***	24.52
RepPargphNum	?	1.64***	3.66	0.02**	3.13
NRepPargphNum	+	6.96***	11.88	0.08***	11.48
AudPvt	-	0.34	0.15	0.01	0.37
AudChg	+	-0.07	-0.05	-0.01	-0.06
Busy	+/-	-4.36**	-2.58	-0.07**	-3.24
Size	+	0.03	0.07	0.01	0.17
Lev	+	4.80*	1.92	0.06*	1.91
Liq	-	-2.79**	-2.38	-0.03**	-2.03
Loss	+	2.09	1.14	0.02	1.12
Subs	+	3.49**	2.50	0.05**	2.72
LogAge	+/-	6.56***	3.77	0.09***	4.12
OwnCon	-	-13.73***	-4.64	-0.17***	-4.50
NStown	+	8.56***	6.26	0.12***	7.02
IndustryDum		Yes		Yes	
YearDum		Yes		Yes	
Adjusted R^2		0.30		0.29	
F-stat		15.93***		14.66***	
N		1221		1221	

*, ** and *** denote significance at the 0.10, 0.05 and 0.01 levels respectively.

5.3.3. Alternative definition of the dependent variable

Consistent with prior studies (e.g., Knechel & Sharma, 2012), we applied *LongARL* as a binary measure of the dependent variable instead of *LogARL* or *ARL* as an alternative measure. The results represented in Table 11 are consistent with the main findings in Table 4, Table 5 and Table 6, indicating that our findings are not sensitive to different measures of ARL and an alternative estimation approach using logistic regression.

Table 11. Logistic regression results for *LongARL* with alternative measures of the Dependent Variable

		Model (1)		Model (2)		Model (3)	
	Expected Sign	Coefficient	Z-Stat	Coefficient	Z-Stat	Coefficient	Z-Stat
Variables							
Intercept		-1.77	-1.64	-1.63	-1.49	-3.92*	-2.64
PargphNum	+	0.67***	6.57				
TNRecExpPargph	+			0.17***	2.80		
ConfLetPargph	+			0.45***	2.83		
CGSoldPargph	+			0.29*	1.65		
ConLiabPargph	+			0.23	1.10		
MisclasPargph	+			-0.10	-0.28		
NConfPargph	+			0.60**	2.02		
OtherPargph	+			0.26	1.53		
RepPargphNum	*?*					-0.05	-1.00
NRepPargphNum	+					0.83***	7.48
Audpvt	-	-0.15	-0.69	-0.15	-0.66	-0.01	-0.03
Audchg	+	-0.13	-0.90	-0.15	-1.05	-0.22	-1.19
Busy	+/-	-0.16	-0.98	-0.12	-0.72	-0.03	-0.13
Size	+	0.02	0.55	0.02	0.52	0.05	0.88
Lev	+	0.54*	1.72	0.46	1.42	0.82	2.03
Liq	-	-0.29***	-2.58	-0.30***	-2.67	-0.32*	-1.98
Loss	+	0.57	2.87	0.57	2.85	0.14	0.60
Subs	+	0.39***	2.90	0.36***	2.64	0.47**	2.68
LogAge	-/+	0.52***	3.25	0.50***	3.13	1.04***	4.53
Conown	-	-1.85***	-6.21	-1.87***	-6.17	-1.94***	-5.22
NStown	+	0.81***	5.92	0.77***	5.58	0. 75**	4.20
YearDum		Yes		Yes		Yes	
IndustryDum		Yes		Yes		Yes	
Pseudo R^2		0.20		0.20		0.23	
Wald Chi2		279.66***		278.10***		167.67***	
N		1443		1443		911	

Note: *, **and***denote significance at the 0.10, 0.05 and 0.01 levels, respectively.

5.3.4. Alternative definition of the independent variables

In Model 2, we tested the role of the combined variable about unrecognised expenses (*TNRecExpPargph)* on ARL. In this section, we include and test the role of auditors' qualification paragraphs in the original version about unrecognised expenses including insufficient reserve for income tax (*TaxResvPargph)*,

insufficient reserve for doubtful debts *(BadebtPargph)*, non-recognised expenses (*NRecgExpPargph)*, insufficient reserve for devaluation of inventories *(NStDInvenPargph),* insufficient reserve for devaluation of financial assets (*NStDInvestPargph)* and insufficient reserve for devaluation of assets *(NStDAssestPargph)* instead of *TNRecExpPargph.* Consistent with the second hypothesis, Table 12 reveals that almost all the issuance of qualified paragraphs by auditors related to unrecognised expenses results in longer ARL.

Table 12.

Regression results for *LogARL* and *ARL* with alternative measures of the Independent Variables

		Model (2) - *ARL*		Model (2)-*LogARL*	
	Expected Sign	Coefficient	T-Stat	Coefficient	T-Stat
Variables					
Intercept		51.89***	4.58	3.94***	27.74
TaxResvPargph	+	2.21	1.46	0.03*	1.70
BadebtPargph	+	2.52**	1.65	0.05***	2.21
NRecgExpPargph	+	4.49***	2.72	0.06***	2.83
NStDInvenPargph	+	6.21***	3.15	0.08***	3.17
NStDInvestPargph	+	-2.99	-1.45	-0.04	-1.35
NStDAssestPargph	+	3.96	1.62	0.03	1.09
ConfLetPargph	+	3.51**	2.27	0.04**	2.04
CGSoldPargph	+	4.92***	2.60	0.05**	2.09
ConLiabPargph	+	4.39**	2.24	0.05**	2.01
MisclasPargph	+	-0.51	-0.23	-0.01	-0.33
NConfPargph	+	3.95*	1.87	0.05*	1.88
OtherPargph	+	3.19*	1.95	0.05**	2.24
Audpvt	-	-1.19	-0.51	-0.02	-0.55
Audchg	+	-0.27	-0.19	-0.01	-0.15
Busy	+/-	-3.66**	-2.20	-0.05**	-2.34
Size	+	0.28	0.53	0.01	0.30
Lev	+	8.24***	2.97	0.12***	3.13
Liq	-	-1.03	-1.12	-0.01***	-0.38
Loss	+	7.27**	3.90	0.09***	3.80
Subs	+	5.80***	4.15	0.08***	4.34
LogAge	+/-	3.37**	2.40	0.05**	2.31
Conown	-	-17.20***	-5.91	-0.24***	-5.75
NStown	+	10.10***	7.27	0.15***	7.94
YearDum		Yes		Yes	
IndustryDum		Yes		Yes	
Adjusted R^2		0.33		0.32	
F-stat		24.94***		22.16***	
N		1443		1443	

In addition, we re-estimated Model 1 and tested the role of two binary variables, *High-AQP* and *QualAudOpn*, as alternative measures of *PargphNum.* The untabulated results reveal that the coefficients on *High-AQP* are 8.54 (*t*-value = 4.07, *p*-value < 0.01) and 0.11 (*t*-value = 3.91, *p*-value < 0.01), where the

dependent variable is *ARL* and *LogARL*, respectively. Moreover, the coefficients on *QualAudOpn* are 24.49 (*t*-value = 5.55, *p*-value < 0.01) and 0.35 (*t*-value = 5.14, *p*-value < 0.01), where the dependent variable is *ARL* and *LogARL*, respectively. Such findings are consistent with our main findings in Table 4.

As an alternative measure of the independent variable, we test the effect of 'new audit opinion qualification' (*NAOQ*) (audit opinion of a firm is qualified in the current year but it was unqualified in the last year). In light of MohammadRezaei et al. (2016), who show that the number of audit report qualifications in the Iranian audit market decreases over time, MohammadRezaei and Faraji (2019) documented that the number of first-time qualification is rare and the authors find that about 10% of qualified audit opinions are *NAOQ*. Hence, we re-estimate Model 1 (dependent variable is *LogARL*) by replacing *PargphNum* with *NAOQ* and untabulated results reveal that the coefficient on *NAOQ* is 0.07 (*t*-value = 2.28, *p*-value <0.05).

5.3.5. Alternative estimation approach

The robustness of the findings was tested by utilising alternative estimation approaches. We re-estimated Model 1, Model 2 and Model 3 using firm fixed effects to capture "omitted time-invariant firm-specific factors" (Ball et al., 2012, p.156). This analysis is expected to lower the power of the tests. Nevertheless, we performed the analysis to test whether the relations between the dependent variables (*LogARL* and *ARL*) and the independent variables (number and types of auditor's qualification paragraphs) could be attributable to time-invariant factors. For brevity, in Table 13, only the results for independent variables in Model 1, Model 2 and Model 3 using firm fixed effects are reported. Because firm fixed effects "over-control for the time-invariant determinants" (Ball et al., 2012, p.161), as reported in Table 13, the coefficients on the independent variables and their significance declined in these regressions compared to those in Table 4. It should also be noted that our findings using firm fixed effects are approximately consistent with the main findings reported in Table 4, Table 5 and Table 6.

Table 13

Regression results reported only for the independent variables, Firm fixed effects approach

		ARL		*LogARL*	
	Expected Sign	Coefficient	T-Stat	Coefficient	T-Stat
Variables					
PargphNum	+	3.55***	2.74	0.05***	3.16
TNRecExpPargph	+	1.10**	2.18	0.02***	2.35
ConfLetPargph	+	0.96*	1.68	0.01*	1.65
CGSoldPargph	+	3.51**	2.20	0.04**	1.98
ConLiabPargph	+	0.45*	1.75	0.03*	1.73
MisclasPargph	+	-1.32	-0.77	-0.01	-0.67
NConfPargph	+	1.89	0.93	0.02	0.85

OtherPargph	+	0.29	0.22	0.01	0.51
RepPargphNum	?	0.18	0.42	0.01	0.69
NRepPargphNum	+	3.54***	5.36	0.04***	5.47

Note: *, **and***denote significance at the 0.10, 0.05 and 0.01 levels, respectively

5.3.6. Endogeneity tests

5.3.6.1. ARL as a dynamic variable and System-GMM

Farag (2017) provides evidence that ARL is shorter for large accelerated filers following a deceasing filing deadline for these firms to 60 days in 2006 compared to regular accelerated filers with 75 days filing deadline. Such a finding indicates that filing deadline plays an important role in ARL though it can impose pressure on auditors to complete the audit process and issue their audit opinion to a short deadline. Farag (2017) has not discussed how large accelerated filers and their auditors deal with the new requirement and release a 10-K annual report in a timely manner (within a 60-day filing deadline). However, in line with prior studies such as Knechel and Pyne (2001), it can be argued that auditors, by decreasing the "scheduling lag" (earlier starting of the audit project or transferral of a part of the audit tests before the client's fiscal year-end), are likely to be able to issue audit opinions before the decreased filing deadline. In this relation, client firms are more likely to accommodate their auditors by producing paper accounts and draft financial statements more quickly.

In Iran, as discussed earlier, firms listed on the TSE have a four-month deadline to release their annual audited reports (MohammadRezaei & Mohd-Saleh, 2018). The firms' boards try to hold their annual general meetings (AGMs) at the same time each year. Therefore, when the auditor sends the client readiness checklist, the board normally sets this notice according to the deadline corresponding to the last year's AGM. Another factor that could indirectly play a role in setting up this checklist is the last year's ARL. If last year's ARL is longer and close to the four-month deadline, the firm's accounting team in the first quarter of the current year is mainly involved with last year's accounts and less attention is paid to the current year's accounts and their preparation. Thus, this case also provides a delay in the timely preparation of the firm's accounts and financial statements for the current year. Therefore, we anticipate that in a country like Iran, where there is no different filing deadline for listed firms, the date of the AGM and the ARL of the last year could be an influential factor in the current year's ARL.

Consequently, standard pooled OLS and panel fixed effects estimators may lead to inconsistent and biased results. Unlike traditional OLS estimators, the System Generalised Method of Moments (Sys- GMM) method includes firm fixed effects to account for unobservable firm heterogeneity and goes beyond the standard fixed effects model by considering the effect of the lagged values of the dependent variable on the

current values of explanatory variables. The results of estimating the three models for *LogARL* using Sys-GMM are provided in Table 14.

As shown in Table 14, three diagnostic tests were used to evaluate the validity of the instruments: (1) Arellano-Bond test for first-order (AR1) and second-order (AR2) serial correlation in the residuals of the difference equation, the results of which indicate no second-order serial correlation in the residuals; (2) the Sargan-Hansen test for correlation between the instrumental variables and residuals, the results of which indicate the non-significance of the statistics and the robustness of the instrumental variables; and (3) the Difference-in-Hansen test, the results of which indicate that the subsets of instruments are exogenous. In general, the results of these diagnostic tests suggest that the instruments are valid. In Model 1, and consistent with the results reported in Table 4, there is a significant positive relationship between the number of AQPs (*PargphNum*) and ARL. In Model 2, and consistent with the results reported in Table 5, there is a significant positive relationship between AQP type (non-recognition of expenses, miscalculation of cost of goods sold, and failure to receive a response to third-party confirmation letters) and ARL. In Model 3, and consistent with the results reported in Table 6, there is a significant positive relationship between non-repetitive AQPs and ARL. Moreover, the results of the present research show that the previous year's ARL affects ARL in the current year, which supports the argument that ARL is a dynamic variable.

Table 14
System GMM results of regression models for *LogARL*

		Model (1)		Model (2)		Model (3)	
	Expected Sign	Coefficient	Z-Stat	Coefficient	Z-Stat	Coefficient	Z-Stat
Variables							
Intercept		2.12***	4.67	1.85***	5.57	2.39***	5.61
Lag-LogARL	+	0.25***	2.75	0.35***	5.92	0.38***	5.67
PargphNum	+	0.07***	3.27				
TNRecExpPargph	+			0.01***	2.55		
ConfLetPargph	+			0.05***	3.09		
CGSoldPargph	+			0.07***	3.79		
ConLiabPargph	+			-0.01	-0.90		
MisclasPargph	+			0.02	0.93		
NConfPargph	+			0.03	1.37		
OtherPargph	+			0.03*	1.72		
RepPargphNum	?					-0.01	-1.04
NRepPargphNum	+					0.03***	4.15
AudPvt	-	0.24***	2.79	0.02	0.45	-0.02	-0.40
AudChg	+	0.01	0.63	0.01	0.10	-0.01	-0.52
Busy	+/-	0.07	0.70	-0.01	-1.36	0.03	0.35
Size	+	0.01	0.33	0.01	1.01	0.01	0.77
Lev	+	-0.10**	-2.19	-0.09**	-2.48	-0.03	-0.79
Liq	-	-0.02	-1.34	-0.03**	-2.12	-0.04**	-1.90
Loss	+	0.01	0.75	0.03*	1.68	0.03	1.67
Subs	+	0.03	0.99	0.025	0.83	-0.01	-0.21
LogAge	+/-	0.26***	4.52	0.22***	4.83	0.15***	3.04

OwnCon	-	0.10	0.95	-0.01	-0.06	0.05	0.39
NStOwn	+	0.04	1.08	0.02***	5.57	0.09***	5.61
Year effect		Yes		Yes		Yes	
Industry effect		Yes		Yes		Yes	
AR(1) p-value		0.00		0.00		0.00	
AR(2) p-value		0.85		0.81		0.1	
Hansen tests of Overid. p-value		0.62		0.73		0.18	
Sargan. p-value		0.45		0.72		0.11	
Difference-in-Hansen tests of exogeneity. p-value		0.45		0.65		0.21	
Wald Chi2. p-value		0.00		0.00		0.00	
N		1155		1155		736	

*, ** and *** denote significance at the 0.10, 0.05 and 0.01 levels respectively.

5.3.6.2. Heckman two-step estimation procedure

In the Iranian setting, some paragraphs may be removed during negotiations between the client and the auditor, and the total number of AQPs may decrease (MohammadRezaei & Faraji, 2019). Moreover, prolonged negotiations around these paragraphs can increase ARL. Therefore, there are unobservable factors that affect APQs. On the other hand, specific attributes of firms and auditors lead to separate audit procedures and thus to different numbers of paragraphs in the audit report. Therefore, the use of Heckman's (1979) two-stage procedure is justified to eliminate the endogeneity caused by self-selection bias in the model that follows. Accordingly, the audit reports were divided into reports with a large or small number of paragraphs based on their median, and these were represented by a dummy variable (*High-AQP*). In the first stage, a probit regression model with the dependent variable *High-AQP* was estimated for all the control variables in the main model along with year and industry dummies. The estimated parameters from the first-stage probit model were used to calculate the Inverse Mills Ratio (IMR) as the self-selection bias parameter. This ratio was then incorporated as an independent variable along with other explanatory variables into the second-stage equation (the main OLS regression model with year and industry fixed effects). Heckman's second-stage model is as follows:

$$LogARL_{it} = \beta_0 + \beta_1\, High\text{-}AQP_{it} + \beta_2\, AudPvt_{it} + \beta_3\, AudChg_{it} + \beta_4\, Busy_{it} \quad (4)$$
$$+ \beta_5\, Size_{it} + \beta_6\, Lev_{it} + \beta_7\, Liq_{it} + \beta_8\, Loss_{it} + \beta_9\, Subs_{it}$$
$$+ \beta_{10}\, LogAge_{it} + \beta_{11}\, OwnCon_{it} + \beta_{12}\, NStOwn_{it} + \beta_{12}\, IMR_{it}$$

$$+ \sum \beta_j \, IndustryDum + \sum \beta_j \, YearDum + \varepsilon_{it}$$

The results of estimating the first- and second-step models with two dependent variables, i.e., *ARL* and *LogARL*, are provided in Table 15. As the data show, there is a significant positive relationship between *High-AQP* and *ARL*. In other words, after controlling for endogeneity using Heckman's procedure, an increase in the number of AQPs leads to an increase in ARL, which is consistent with the main findings. The significance of the coefficient of IMR in Table 15 indicates the validity of Heckman's procedure and the presence of self-selection bias as well as endogeneity in the model. It is further noted that, due to the collinearity problem, we exclude *NStOwn* from the second-stage regressions of all models, see Lennox et al. (2012).

Table 15
Heckman two-step estimation procedure

	First Step Model (*High-AQP*)		Second Step Model (*ARL*)		Second Step Model (*LogARL*)	
Variables	Coefficient	Z-Stat	Coefficient	t-Stat	Coefficient	t-Stat
Intercept	-2.39***	-3.45	133.17***	10.67	5.16***	29.60
High-AQP			10.03***	6.48	0.13***	6.50
AudPvt	-0.37***	-2.66	5.43	2.11	0.08	2.45
AudChg	-0.05	-0.60	1.34	0.91	0.02	0.99
Busy	-0.12	-1.04	-0.72	-0.40	-0.01	-0.29
Size	0.04	1.49	-0.36	-0.71	-0.01	-0.90
Lev	0.73***	4.39	-4.59	-1.41	-0.08*	-1.87
Liq	0.06	0.94	-2.23*	-2.26	-0.02	-1.60
Loss	0.70***	6.41	-7.04***	-3.19	-0.12***	-4.24
Subs	0.30***	3.30	-0.72	-0.46	-0.01	0.59
LogAge	0.20**	2.26	-1.06	-0.68	-0.02	-1.03
OwnCon	-0.02	-0.14	-17.76***	-6.00	-0.24***	-5.77
NStOwn	0.52***	5.88				
IMR			-32.54***	-9.79	-0.50***	-10.58
Year effect	Yes		Yes		Yes	
Industry effect	Yes		Yes		Yes	
Pseudo R^2	0.19					
LR (Chi2)	294.60***					
Adjusted R^2			0.31		0.30	
F-Stat			29.66***		26.49***	

*, ** and *** denote significance at the 0.10, 0.05 and 0.01 levels, respectively.

5.3.7. Subsample analysis

We additionally analysed using three sub-samples to substantiate the main findings. First, we addressed the potential endogeneity driven by analysing the total sample (including qualified and non-qualified observations) in relation to the first and second hypotheses. Second, Model 3 was re-estimated using data from only repetitive and non-repetitive observations. Finally, we examined board independence as an

additional explanatory variable because data regarding the variable are not available for all firm-year observations in the present study.

Our main findings regarding the first and second hypotheses are obtained from analysing the total sample, which contains observations with both qualified and non-qualified audit opinions. This may result in concerns regarding whether our main findings suffer from potential endogeneity arising from characteristics of observations with qualified and non-qualified audit opinions. To address such potential concerns, we reran Model 1 and Model 2 for a sub-sample (911 firm-year observations) of observations with only a qualified audit opinion. As reported in Table 16, our findings are consistent with the main findings reported in Table 4 and Table 5, in which we find that the number of AQPs is positively associated with ARL and some AQPs (non-recognition of expenses, failure to receive a response to third-party confirmation letters, miscalculation of cost of goods sold, and contingent liabilities) have a positive relationship with ARL.

Table 16

Regression results only for independent variables, observations with qualified audit opinions

		ARL		*LogARL*	
	Expected Sign	Coefficient	T-Stat	Coefficient	T-Stat
Variables					
PargphNum	+	8.93***	6.59	0.11***	6.17
TNRecExpPargph	+	2.89***	4.58	0.04***	4.59
ConfLetPargph	+	4.37***	2.86	0.05**	2.44
CGSoldPargph	+	4.56**	2.44	0.04*	1.90
ConLiabPargph	+	4.96***	2.66	0.05**	2.30
MisClasPargph	+	-0.73	-0.34	-0.01	-0.45
NConFPargph	+	1.51	0.72	0.02	0.71
OtherPargph	+	0.89	0.54	0.01	0.53

Note: *, **and***denote significance at the 0.10, 0.05 and 0.01 levels, respectively

To substantiate the main findings regarding the third hypothesis, we re-estimated Model 3 using observations with only repetitive (83 observations) and non-repetitive (348 observations) auditors' qualification paragraphs (we excluded observations with both repetitive and non-repetitive auditors' qualification paragraphs, 480 observations). The untabulated results reveal that the coefficients on *NRepPargphNum* are 8.36 (t-value = 2.69, p-value <0.01) and 0.10 (t-value = 2.55, p-value <0.05), where the dependent variable is *ARL* and *LogARL*, respectively. Such findings are consistent with our main findings in Table 6.

We included the board independence (*BodIndp*) in Model 1, Model 2 and Model 3 as an additional explanatory variable. The untabulated results indicate that board independence has an insignificant relationship with *ARL* and *LogARL* a finding that may imply that, in the context of Iran, ownership structure

has much more explanatory power in relation to ARL than does board independence. In addition, the results of re-estimating Model 1, Model 2 and Model 3 by including board independence as an additional explanatory variable are consistent with the main findings reported in Table 4, Table 5 and Table 6.

6. Discussion and conclusion

Reduction in ARL and the timely release of audited information are factors that influence the efficiency of the capital market. There are many studies that have examined the determinants of ARL, but the number of qualified opinions in Iran is considerably high, and the multitude and variety of AQPs is considerable. Moreover, given the limited empirical evidence regarding the role of the number and type (nature and repetitiveness) of AQPs on ARL, the present study aims to fill the knowledge gap in the accounting literature.

The findings of the present study show that an increase in the number of AQPs leads to an increase in ARL. In other words, in the presence of AQPs, auditors must spend sufficient time to discover and document material misstatements and negotiate with the client. As for AQP types, the results show that there is a significant positive relationship between AQPs related to non-recognition of expenses, failure to receive a response to third-party confirmation letters, miscalculation of cost of goods sold, contingent liabilities, non-compliance with accounting standards (standards 19 and 20 in the Iranian National Accounting Standards about subsidiaries and consolidated financial statements), and other (unspecified) paragraphs and ARL. The challenging nature of paragraphs related to non-recognition and insufficient reserves (expenses) due to their impact on the client's profit and loss as well as tax-related problems, the time-consuming process of sending and receiving a response to third-party confirmation letters, the complexity of calculating the total cost of goods sold, and the considerable tax implications of measuring it incorrectly are more likely to result in additional audit procedures and time-consuming auditor-client negotiations. In this line, our further analysis reveals that, although AQPs due to both "scope limitation" and "departure from accounting standards" are positively associated with ARL, this delay is longer in the case of "scope limitation". Finally, the further investigation of AQPs by grouping them into repetitive and non-repetitive ones reveals that non-repetitive (new) AQPs increase ARL; however, repetitive AQPs have no significant effect on ARL. This finding suggests that the auditor must spend a considerable amount of time to discover and document newly emerged material misstatements (increase in fieldwork lag) and negotiate with the client firm's manager (increase in reporting lag) to include a non-repetitive AQP in the audit report.

The present research has significant implications for future research. Future studies can examine the role of the number of non-repetitive AQPs on auditor and CEO changes. The relationship between the

number and type of AQPs, and the characteristics of the audit firm and audit partners can also be further explored. Testing the relationship between the number and type of AQPs and audit fee is an interesting topic for future research. Investigating the effect of non-repetitive AQPs on the length of time between signing the audit report and its public release is also recommended. Given the arguments provided for including the previous year's ARL in the regression model for the current year's ARL, it is recommended that future research tests the dynamic nature of ARL. Moreover, the effect of AQP types on different variables, such as dividend pay-out ratio, executive compensation, and stock price, can be investigated. Finally, since there are other types of paragraphs after the audit opinion paragraph in Iran that do not qualify the audit opinion and we have not included them in our study, future studies can focus on these paragraphs (paragraphs other than AQPs) to examine their effect on ARL.

Our findings also have significant implications for regulatory bodies. Since our findings reveal that ARL is longer for firms with higher AQPs, it is recommended that authority bodies in Iran and other countries with high AQPs like Greece and Spain find a way to encourage or require client firms to decrease AQPs as an important driver of long ARL. It is also suggested that authority bodies should be more cautious about non-repetitive (new) AQPs and require a firm's managers to discuss the reasons for new AQPs if ARL is longer for this firm with new AQPs and attempt to address them. In addition, since AQPs with different natures have different impacts on ARL, it is suggested that authority bodies pay more attention to the nature of AQPs and, by launching some rules, try to decrease the number of more challenging AQPs if such AQPs result in longer ARL. Moreover, shareholders are encouraged to investigate the reasons for the issuance of AQPs during annual general meetings and to require the management to resolve AQPs to reduce the delay in disclosing audited financial statements in the subsequent year. The above would also help potential shareholders to gain better insight about the reliability of financial statements as a result of unqualified audit reports.

Our study has similar limitations to empirical studies of this type. For example, given that purposive sampling was used to select the sample firms (leading to the exclusion of financial institutions), the results must be generalised with caution. According to Knechel and Payne (2001), one of the limitations in dividing ARL into three separate components is the lack of access to detailed data about scheduling lag, fieldwork lag and reporting lag, which can be problematic for the explanation and interpretation of the results.

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Appendix A: Variables and their definitions

Variable	Definition
ARL	The number of days between the fiscal year-end date and the initial audit report date
LogARL	Logarithm of the length of time between the fiscal year-end date and the initial audit report date
PargphNum	Number of audit qualification paragraphs (before the opinion paragraph)
TNRecExpPargph	Total number of paragraphs related to non-recognition of expenses, including insufficient reserves for income tax, insufficient reserves for doubtful debts, insufficient reserves for devaluation of assets and investments, insufficient reserves for devaluation of inventories, and non-recognition of other expenses
ConfLetPargph	1 if the audit report includes a paragraph for failure to receive a response to third-party confirmation letters, and 0 otherwise
CGSoldPargph	1 if the audit report includes a paragraph for miscalculation of cost of goods sold, and 0 otherwise
ConLiabPargph	1 if the audit report includes a paragraph for contingent liabilities, and 0 otherwise
MisclasPargph	1 if the audit report includes a paragraph for misclassification of accounts in financial statements, and 0 otherwise
NConfPargph	1 if the audit report includes a paragraph for non-compliancy with standards 18, 19 and 20 in Iran's National Accounting Standards (involving failure to prepare consolidated financial statements, consolidated financial reporting, and use of eigenvalues for investment in affiliated businesses), and 0 otherwise
OtherPargph	Other AQPs (other than those separately discussed)
TaxResvPargph	1 if the audit report includes a paragraph for insufficient reserve for income tax, and 0 otherwise
BadebtPargph	1 if the audit report includes a paragraph for insufficient reserve for doubtful debts, and 0 otherwise
NRecgExpPargph	1 if the audit report includes a paragraph for non-recognised expenses, and 0 otherwise
NStDInvenPargph	1 if the audit report includes a paragraph for insufficient reserve for devaluation of inventories, and 0 otherwise
NStDAssestPargph	1 if the audit report includes a paragraph for insufficient reserve for devaluation of assets, and 0 otherwise
RepPargphNum	Number of repetitive paragraphs
NRepPargphNum	Number of non-repetitive paragraphs

Scope	1 if the audit report includes at least one paragraph due to scope limitation and uncertainty, and 0 otherwise
AccStandD	1 if the audit report includes at least one paragraph due to the departure from accounting standards, and 0 otherwise
AudPvt	Private auditor; 1 if the auditor is from a private audit firm that is a member of the Iranian Association of Certified Public Accountants (IACPA), and 0 otherwise (i.e. Iran Audit Organization)
AudChg	1 if the auditor is changed, and 0 otherwise
Busy	Busy audit season; 1 if fiscal year-end is March 19, and 0 otherwise. "A large percentage of firms listed on the TSE report in accordance with the Iranian calendar year (Hijri Shamsi). Hence, the busy season for firms falls around March 20th, as this is typically the fiscal year-end"(MohammadRezaei & Mohd-Saleh, 2018, p.898).
Size	Firm size; natural log of a firm's total assets
Lev	Leverage; total debt divided by the book value of total assets
Liq	Current ratio; ratio of current assets to current liabilities
Loss	1 if the client has a negative net income, and 0 otherwise
Subs	1 if a firm has a subsidiary or several subsidiaries, and 0 otherwise
LogAge	Firm age; natural log of the number of years from establishment of the client firm
OwnCon	Ownership concentration; the percentage of a firm's outstanding shares owned by the largest shareholder
NStOwn	1 if more than 50 per cent of a firm's shares are owned by private shareholders, and 0 otherwise
YearDum	Dummies for time (year)
IndustryDum	Dummies for industry