

**Dr/Amr Nazieh Mahmoud Ezat**

Assistant Professor, Accounting  
Department, Faculty of Commerce,  
Mansoura University

## **The impact of audit-related factors on audit report lag for the Egyptian listed non-financial companies.**

### **Abstract:**

Few studies investigated the determinants of audit report lag in Egypt. This study extends the prior studies by examining the influence of “audit-related factors”, namely audit firm industry specialization, audit tenure, audit fees and joint audit on audit report lag for the Egyptian listed non-financial companies covering the period 2011- 2013. The results indicate that on average, the sampled companies consume 77 days from the end of balance sheet date to the signed audit report date. In addition, by running Ordinary Least Square (OLS) regression analysis, the findings reveal that, while company size, leverage and qualified auditor report associate positively to a report lag, audit fees, joint audit, audit firm industry specialization, managerial ownership and government ownership associate negatively. Based on the limited literature addressed auditor-related factors in the Egyptian environment, the current study would hold a contribution in terms of investigating the impact of such factors on audit report lag in focused companies.

### **1. Introduction**

Audited financial statements are likely to be the only reliable sources of information available in the market as it is stipulated that all released financial statements should be certified by exter

nal auditor(s). However, because of the nature of the auditing process, there is always a gap between the closing date of the companies’ balance sheet and the date of publication of the audited financial statements. This gap is referred to as “audit lag.” There is consensus among researchers in terms of the measurement of this gap; they used the time lag from the end of the fiscal year to the date of issuing the auditor’s report as a proxy for audit duration. However, they differed in terms of labeling this gap. Some researchers used the term “audit delay” to refer to this gap (e.g., Givoly and Palmon, 1982; Ashton et al., 1987; Ashton et al., 1989; Carslaw and Kaplan, 1991; Jaggi and Tsui, 1999; Al-Ghanem and Hegazy, 2011), while others used the term “audit lag” (e.g., Bamber et al., 1993; Schwartz and Soo, 1996; Lai and Cheuck, 2005; Leventis et al., 2005; Modugu et al., 2012; Al-khatib and Marji, 2012).

The current study uses the term “audit report lag” (hereafter ARL) to represent the lag related to audit duration or audit timeliness. Since audit lag is wider than audit delay, using these terms interchangeably is not recommended. Companies that issue their financial statements within the regulatory deadline cannot be represented delayed in releasing their financial statements. Consequently, the current study defines

ARL as the period from the closing date of the balance sheet to the signed audit report date.

All companies should seek to minimize their audit lag in order to enhance market efficiency. Abdulla (1996) reported that the shorter the gap between the end of the accounting year and the publication date of the financial statements, the more would be the benefits derived from the audited annual reports (Hossain and Taylor, 1998).

However, ARL is out of their control. Companies may exert some pressure on their independent auditors to finalize the audit as quickly as possible, but the final decision remains with the auditors. Auditors seek to avoid the risk of litigation; therefore, they will not issue their audit report rapidly without the due care. Therefore, they prefer to spend more time and effort to avoid such risks which may increase the ARL.

Thus, it is important to recognize and determine the causes of ARL in order to manage this lag so that companies can achieve their objectives on the one hand, and the creditability of the audited financial statements can be ensured on the other. Therefore, the current study mainly examines "audit-related factors" (because they are the most important factors in determining ARL), which have not been investigated widely in the Egyptian context. This represents the main contribution of this study.

In Egypt, based on the Company Law 159/1981 amended by the Company Law 3/1998 and the decision of the Egyptian Financial Supervisory Authority no. (132) for 2010, every Egyptian company should prepare and issue its

financial statements within maximum of three months after the end of the fiscal year. The Egyptian Auditing Standards do not include any auditing standard directly related to ARL. However, the Egyptian Auditing Standard No. 300 "Planning an Audit of Financial Statements states that "the auditor should design an overall strategy for the auditing process to determine the scope, timeliness, and the direction of the audit process".

A few prior studies examined ARL and its determinants in the Egyptian context. While Afify (2009) and Saada (2014) investigated the impact of corporate governance-related factors on ARL, Eldyasty (2011) examined the effects of company characteristics-related factors only. However, Mohamed (1995) proposed an overall model that included a few audit-related factors (two variables) to examine the determinants of audit delay. No prior study (to the best of the author's knowledge) in the Egyptian context has explored the impact of "audit-related factors". Thus, the current study seeks to fill this gap in the literature by examining the impact of "audit-related factors" on ARL using a sample of Egyptian listed non-financial companies covering the period 2011–2013.

Consequently, the two main objectives of this study are (1) to explore the current practice of the Egyptian listed companies regarding the date of issuing their audit reports, and (2) to empirically investigate the "audit-related factors" responsible for the ARL of the Egyptian listed non-financial companies during the period 2011–2013.

The rest of this paper is organized as follows. Section 2 introduces the research background of this study. Section 3 presents the analytical review of the prior studies that investigated ARL. To test the main hypotheses of this study, Section 4 discusses the arguments and the results of the hypotheses. Section 5 presents the study's samples, data, model specification, and variables. Section 6 discusses the empirical results. Finally, Section 7 reports the study's conclusions, limitations, and recommendations for future research.

## 2. Background

### Importance of audit report lag

The financial statements prepared by any company should be certified and audited by external, independent third parties, namely, the auditors. The users of financial information would find it difficult to verify the quality of the information presented in the companies' financial statements without depending on trustworthy parties. Many circumstances such as conflicts of interests, important economic consequences, complexity, and the lack of direct access to information in the auditing process environment justify the need for qualified independent auditors to audit financial statements (Abdollahi, 2012).

However, because of the agency problem, it is not possible to depend on

published information that has not been audited by one or more of the external auditors, which implies that companies cannot directly provide the required information at the end of their fiscal year.

Simultaneously, the auditors need to reduce litigation risks by performing the audit carefully. Thus, auditors may take some time to issue their reports, which may delay the issue of the companies' financial statements. Thus, all the parties involved—including the management—aim to achieve reliability by auditing the financial statements.

Therefore, all the parties agree that the delay in publishing the financial statements due to the necessity of performing auditing processes is inevitable. Audit delay can be caused by the time taken by the clients to prepare the draft (unaudited) financial statements as well as by the time taken by the auditors to complete their work and issue their reports about the draft financial statements to the client's stakeholders.

The ARL differs across countries because of the differences in the laws and regulations that are applicable in each country. Thus, ARL may range from 60 days (e.g., in the U.S.) to 180 days (e.g., in Malaysia and France). Table 1 summarizes the ARL in some countries.

**Table 1: ARL in different countries**

Country	Audit report lag (days)	References
U.S.	60	Behn et. al. (2006)
Bangladesh	120	Karim and Ahmed (2005)
Greece	160	Leventis et al. (2005)
France	180	Soltani (2002)
Malaysia	180	Hashim and Abdul Rahman (2011)
Hong Kong	180	Jaggi and Tsui (1999)
Kuwait	90	Al-Ghanem and Hegazy (2011)
Jordan	90	Alkhatib and Marji (2012)
Bahrain	90	Al-Ajmi (2008)

In Egypt, listed companies are required to publish their annual financial statements within three months of the fiscal year-end. In addition, listed companies must present their financial statements 45 days after the end of each quarter. However, many companies fail to meet these requirements (CMA, 2008; Afify, 2009).

Consequently, many countries seek to issue regulations and laws that would minimize ARL in order to accelerate the issuing of audit reports. For example, the U.S. Securities and Exchange Commission (SEC) has issued rules requiring phased reductions in filing deadlines from 90 days after the financial year-end to 60 days by 2007 (SEC, 2005).

The timeliness of releasing financial statements to investors would be affected by the time taken by the auditors to finalize their work (Reza and Poudeh, 2014). The shorter the gap between the fiscal year-end and the release date of the audit report, the more valuable the information would be (Ireland, 2003). Consequently, examining ARL is a critical issue, as this lag would cause shareholders and potential shareholders to

postpone their share-related transactions. This behavior, in turn, would have a negative impact on the company (Ng and Tai, 1994; Hashim and Rahman, 2011).

The ARL affects the quality of accounting information in many different aspects, which demonstrates its influence.

First, the disclosure quality of reporting, which includes the disclosed information and the audited information, can be affected by ARL. On the one hand, the timeliness of financial information is perceived as the most influential factor for the high quality of reporting (IASB, 2005; Amirul and Salleh, 2014). On the other hand, annual audit reports play a noteworthy role in the timeliness of financial statements by conveying timely audited information to the markets. Audited information has the creditability required for different stakeholder to use the information in different contexts. However, the value of the information contained in audited financial statements generally declines as the ARL increases because investors and other users of the information would obtain the financial information

from other potentially costlier sources (Knechel and Payne, 2001; Amirul and Salleh, 2014). This implies that the longer the audit delay, the lower would be the quality of the disclosed information because of the delay in making the information available to the investors.

Moreover, the delay in an auditor's opinion about the financial information prepared by the management leads to information asymmetry and increases the uncertainty associated with investment decisions (Amirul and Salleh, 2014). Delayed disclosure may motivate some investors to acquire costly, private pre-disclosure information, which would put these well-informed investors in a better position compared to the less-informed investors (Afify, 2009). Consequently, this may adversely affect the investors' confidence in the capital market.

Second, the quality of the audit process can be affected by ARL. Lee and Jahng (2008) suggested that examining ARL would increase the understanding of the audit process, especially audit efficiency, which influences audit quality. In this regard, (Bamber et al. 1993) demonstrated that ARL is one of the few variables associated with audit efficiency. Efficiency implies the use of fewer inputs to obtain a given output; ARL (i.e., the time required to complete the audit) is one proxy for audit inputs. Therefore, ARL may provide empirical evidence for the input side of audit efficiency as it represents one of the few observable variables associated with audit efficiency (Afify, 2009).

Consequently, the extant literature on auditing has demonstrated the importance of examining audit lag because of its impact on the timeliness of the disclosed financial and audited information. In addition, identifying the key determinants of ARL would aid in determining the main factors that lead to this lag. Using this information, regulatory decisions can be taken when determining the time that elapsed in issuing the audit report.

Exploring the timeliness of audit reports in emerging countries such as Egypt is a critical issue because of the crucial role of the audit reports in these countries, as audit reports represent the only source of reliable information for various investors.

### 3. Literature review

Several prior studies examined the notion of timeliness reporting in different countries. These studies used different views to express the timeliness dimension. For instance, some prior studies used the concepts of management lag and total lag. The current study concentrates mainly on ARL.

Several studies investigated the relationship between ARL and company characteristics, audit-related factors, and corporate governance factors in developed and developing countries, which demonstrates the concerns about the effects of this lag. However, few studies in the Egyptian context have examined this topic. The prior studies related to ARL are classified and discussed in the subsequent sections.

### **3.1 Studies examined company characteristics**

According to Owusu-Ansah (2000, p. 243), the factors related to company characteristics are “those that either enable management to produce a more timely annual report or reduce costs associated with undue delay in reporting.” Many studies examined the impact of such characteristics on ARL in either developed or developing countries.

#### ***3.1.1 Studies in the context of developed countries***

The initial studies on ARL were in the context of developed countries that are characterized by organized regulations. One of the pioneer studies on ARL was conducted by Dyer and McHugh (1975), who examined the relationship between reporting lag and a few variables related to company characteristics using a sample of 120 companies listed on the Sydney Stock Exchange in 1971. They reported that client size and fiscal year-end are the main determinants of reporting lag.

Givoly and Palmon (1982) investigated the relationship between audit delay and three main variables, namely, company size, operational complexity, and internal control quality. They examined the content of 210 annual reports of U.S. listed companies during the period 1960–1974. They reported that company size and complexity measured by the ratio of inventory to total assets are the significant explanatory variables of audit delay.

Ashton et al. (1987) examined 14 variables using a sample of 488 U.S.

clients by collecting data from the questionnaires mailed in May 1982 to the managing partners of the U.S. offices of Peat, Marwick, Mitchell & Co. The regression results revealed that company size, operational complexity, internal control quality, listing status, and the mix of interim and final audit work are significantly related to ARL. The mean audit delay of 62.5 days is approximately three weeks shorter than what was found in Australia by Dyer and McHugh (1975).

In the context of Canada, Ashton et al. (1989) provided empirical evidence that ARL was influenced significantly by extraordinary items, industry classification, signs of net profit, and the types of audit opinions using a sample of 465 listed Canadian companies during 1977–1982. The mean audit delay was found to be stable at 55 days in every year of the sample.

Similarly, Newton and Ashton (1989) investigated the relationship between audit delay and audit firm structure using the data of 300 Canadian firms. The results indicated that the audit delay was 54 days, on average. In addition, longer audit delay was significantly associated with smaller clients, non-financial clients, the existence of extraordinary items, and structured audit firms.

By examining the annual reports of 245 and 206 New Zealand public companies for the years 1987 and 1988, respectively, Carslaw and Kaplan (1991) investigated the factors affecting audit delay. The study demonstrated that, contrary to what had been speculated, the mean audit delay has not de-

clined over time. They reported that for 1987 and 1988, the mean audit delay was approximately 88 and 95 days, respectively. Moreover, their empirical findings demonstrated that both company size and the sign of income significantly affected audit delay across the two years examined in the study.

### ***3.1.2 Studies in the context of developing countries***

Many studies have examined ARL in the context of emerging countries, using a variety of variables that influenced ARL.

In Pakistan, Hossain and Taylor (1998) conducted univariate and multivariate analyses using a sample of 103 Pakistani listed companies in 1993. Their findings illustrated that the audit delay for Pakistani companies ranged from a minimum interval of 30 days to a maximum interval of 249 days. In addition, of the seven variables related to company characteristics, “subsidiaries of multinational companies” was the only significant variable that influenced ARL.

Using a sample of 393 Hong Kong companies for the period 1991–1993, Jaggi and Tsui (1999) examined the determinants of ARL. Their regression results demonstrated that companies with weak financial conditions and those that are audited by audit firms using the structured audit approach are associated with longer audit delays. They reported that the mean audit delay for the total sample is 105.88.

Using a sample of 558 annual reports of the listed companies in three South Asian countries (Bangladesh, India, and Pakistan) in 1998, Ahmed

(2003) examined three models related to the timeliness of corporate annual reporting. One of these models dealt with ARL, which was found to be 162 days, 92 days, and 145 days in Bangladesh, India, and Pakistan, respectively. The regression analysis indicated that the financial year is the only significant variable for all the three countries. Further, the results demonstrated that large audit firms take less time to complete the audit process in these countries, except in Bangladesh; additionally, profitability and company size were found to be significant determinants only in Pakistan.

Al-Ghanem and Hegazy (2011) analyzed the main factors affecting audit report delay in Kuwait. The sample included 149 and 177 listed companies for the years 2006 and 2007, respectively. All the examined variables were found to be insignificantly associated with audit delay, except company size. They concluded that large companies will attempt to reduce the audit delay. Further, the mean audit delay for the sampled companies was approximately 57 days for 2006 and 62 days for 2007.

In Nigeria, Modugu et al. (2012) examined the relationship between ARL and various company characteristics using a sample of 20 quoted Nigerian companies during the period 2009–2011. They reported that the interval between the balance sheet date and the date of the auditor’s report ranged from a minimum of 30 days to a maximum of 267 days. The results from the panel data estimated using ordinary least squares (OLS) regression analysis indicated that the multinational connections of the companies, company size, and the

audit fees paid to auditors are the key explanatory variables for ARL in Nigeria.

Using a sample of 137 companies listed on the Jordanian Stock Exchange in 2007, Alkhatib and Marji (2012) investigated the factors affecting the timeliness of audit reporting in Jordan. They reported that company size, leverage, profitability, and type of audit firm were significantly associated with ARL in either the service or the industrial sectors. In addition, there was a gap of approximately 41 days (on average) between the fiscal year-end and the date of issue of the audit report.

Reza and Poudeh (2014) aimed to explore the relationship between ARL and short-term debt maturity for the companies listed on the Tehran Stock Exchange. Using the data of 96 Iranian listed companies during the period 2007–2011, they reported a positive significant impact of short-term debt maturity on ARL. In addition, qualified audit opinion and leverage reduce the lag in audit reporting.

Appendix 1 summarizes the studies that examined company characteristics.

### **3.2 Studies examined audit-related factors**

Audit-related factors are “those that are likely to aid the auditor in carrying out the audit assignment and issuing the audit report promptly” (Owusu-Ansah, 2000, p. 243). Many audit-related factors have been examined in prior studies.

#### ***3.2.1 Studies in the context of developed countries***

Bamber et al. (1993) investigated the determinants of ARL using the data of 972 firms in seven U.S. industries for three consecutive years. They used a comprehensive model of ARL based on the amount of audit work required, the incentives to provide timely reports, and the extent to which the auditor used a structured audit approach. They reported that the mean ARL was about 40 days. In addition, the regression analysis results indicated that audit lag was influenced by three factors that affected the amount of the audit work required: auditor’s business risk, audit complexity, and other work-related factors (such as extraordinary items, net losses, and qualified audit opinions). Moreover, they found that large clients have a shorter audit lag.

Using 1,800 U.S. firm-year observations, Schwartz and Soo (1996) stated that the audit lag increased for companies that switched their auditors late in the fiscal year. Further, their findings indicated that the presence of a structured auditor, extraordinary items, operating losses, the likelihood of going bankrupt, going-concern opinions, and qualified opinions are significantly positive, while the firm size and membership in the financial industry are significantly negative. The mean ARL for all the firm-years in the sample was 60.13.

Knechel and Payne (2001) extended the prior studies on ARL by adding three previously uninvestigated audit firm factors that could potentially influence ARL. They used a proprietary database of 226 audit engagements from an international audit firm. The study

revealed that incremental audit effort, allocation of audit team effort, and provision of non-audit services are significant determinants of ARL.

In Australia, Lai and Cheuck (2005) investigated the impact of audit partner rotation and audit firm rotation on ARL using the data of 369 Australian companies in 2001. The mean delay between the fiscal year-end and the audit report date was about 73 days. The findings showed that ARL was not affected by any of the rotation variables (audit partner rotation, lateral audit firm rotation, and cross-down audit firm rotation), except cross-up audit firm rotation, which significantly increased ARL.

Analyzing the time taken for the transition from an emerging market to a newly developed capital market by the Greek companies listed on the Athens Stock Exchange (ASE) in 2000, Leventis et al. (2005) examined the impact of some audit-related factors and some variables related to company characteristics on ARL. The study provided empirical evidence for the impact of type of auditor, audit fees, number of remarks in the audit report, the presence of extraordinary items, and the expression of uncertainty in the audit report on ARL. On average, the sampled companies took approximately 98 days to issue the audit report.

Using the panel data methodology, Bonson-Ponte et al. (2008) analyzed the factors that affect ARL. Their sample included 105 companies belonging to the Spanish continuous market from 2002 to 2005. The study demonstrated that the mean and minimum audit delay

in sectors that were subject to regulatory pressure were lower than the mean and minimum audit delay in other sectors. The findings showed that large companies had shorter audit delay when they were related to the financial and energy sectors, which are subject to regulatory pressure.

Habib and Bhuiyan (2011) explored the impact of the audit firm's industry specialization on ARL using a sample of 502 firm-year observations from 2004 to 2008 based on companies listed on the New Zealand Stock Exchange. Their findings revealed that being audited by industry specialist auditors had a negative impact on ARL. In addition, the mandatory adoption of the International Financial Reporting Standards (IFRS) increased the ARL for all the auditors, except the industry specialist auditors. The sampled companies had a mean reporting delay of 61 days.

Recently, (Vuko and Cular (2014) used pooled OLS regression analysis to test the key determinants of ARL for non-financial companies listed on the Zagreb Stock Exchange (ZSE), covering the period 2008–2011. Of the six variables examined, only the existence of an audit committee, profitability, and leverage were found to be statistically significant determinants of audit delay in Croatia. For the sampled companies, the average gap between the fiscal year-end and the issue of the audit report was approximately 106 days.

### ***3.2.2 Studies in the context of developing countries***

Analyzing 1537 listed Korean firms from 1999 to 2005, Lee and Jahng (2008) examined whether ARL is de-

terminated by various audit-related factors. They reported that the non-audit fees paid to incumbent auditors, the use of Big 4 auditors, and unqualified audit opinions are significantly related to low ARL. However, the study failed to indicate any relationship between ARL and auditor tenure or abnormal audit fees. Additional analyses provided empirical evidence for the impact of abnormal audit hours, the provision of tax services, and services related to the design of internal control systems on ARL. For all the sampled companies, the mean ARL was 45.71 days.

In Bangladesh, Ahmed and Hossain (2010) sought to identify the main factors influencing ARL for 87 Bangladeshi listed companies in 2007. The average time taken to complete the audit of the listed companies in Bangladesh was 101 days. The multivariate analysis results showed that the type of auditor, financial company, profitability, and company size significantly reduced the time taken to prepare the audit report, while the type of audit report and leverage significantly increased the delay.

Hajiha and Rafiee (2011) investigated the influence of internal audit function quality on the timeliness of independent audit reporting for 57 companies listed on the Tehran Stock Exchange (TSE) from 2005 to 2009. Using logistic regression, they demonstrated that two measures of internal audit function quality—internal audit objectivity and internal audit competence—have a significant association with audit delay. However, the other measurement (internal audit size) has no significant association with audit delay.

In a later study, (Banimahd et al. (2012) examined the influence of auditor change on ARL for 243 Iranian listed companies from 2002 to 2010. The multivariate analysis revealed that the only determinants of ARL were auditor change (from audit organization to private audit firms), audit report type, and firm size. Further, the sampled companies took 83.11 days (on average) to issue the audit report.

Enofe et al. (2013) designed an empirical study to examine the influence of audit firm rotation on ARL using the data from the annual reports of 50 randomly selected Nigerian listed companies in 2011. Using OLS analysis, they showed that ARL was affected significantly by audit firm rotation, company size, audit fees, and financial year-end. Further, the sampled countries took 99.68 days on average to issue the audit report.

To test the impact of compliance with IFRS on audit lag, Amirul and Saleh (2014) conducted an empirical study of 257 public Malaysian companies listed on the main market of the Bursa Malaysia during the period 2009–2010. Their results showed that the implementation of the new accounting standards increases ARL. Further, company size, loss, and audit opinion were found to significantly influence ARL. The descriptive results indicated that ARL increased on average from 96.65 in 2009 to 99.5 in 2011.

Appendix 2 summarizes the studies that examined the audit-related factors.

### **3.3 Studies examined corporate governance and ownership structure variables**

#### ***3.3.1 Studies in the context of developed countries***

An extensive literature search did not reveal any prior study that examined the relationship between corporate governance factors and ARL in the context of developed countries.

#### ***3.3.2 Studies in the context of developing countries***

In Malaysia, various prior studies have examined the influence of either the corporate governance variables or the ownership structure variables on ARL. For instance, Che-Ahmed and Abidin (2008) used a single ownership structure variable (director shareholdings) in relation to ARL. Using the data of all publicly held Malaysian companies listed on the Bursa Malaysia in 1993, they demonstrated that the mean audit delay of Malaysian companies was 114 days, which is much longer than the audit delay in Western countries. The multivariate analysis revealed that director shareholdings, number of subsidiaries, and audit opinion were important determinants of audit delay for both the financial and non-financial sectors. However, total assets, type of audit firms, and returns on equity influenced ARL only in the non-financial sector.

Following the implementation of the Malaysian Code on Corporate Governance in 2001, Mohamed-Nor et al. (2010) investigated the ARL of Malaysian public listed companies by analyzing 628 annual reports issued in 2002.

The results of the multivariate analysis indicated that active and larger audit committees shorten the audit lag. However, the study failed to find any empirical evidence for the impact of the other corporate governance variables on ARL. In 2002, Malaysian listed companies took about 100 days on average to issue their audit reports after the fiscal year-end.

Two studies were conducted by the same set of authors (Hashim and Rahman, 2010, 2011) using the same sample that included 88 companies listed on the Bursa Malaysia for a three-year period (2007–2009). The former study examined the variables related to the board of directors, while the latter study examined the audit committee variables. The results showed that among the board variables, there was a significant negative relationship between board diligence and ARL, while among the audit committee variables, audit committee independence and audit committee expertise helped in reducing the ARL of the companies in Malaysia. Both studies reported that the ARL for the listed companies in Malaysia ranged from 36 days to 184 days for the three sampled years.

Additionally, in the Malaysian context, Shukeri and Islam (2012) investigated the impact of audit committee function on ARL using a sample of 491 Malaysian listed companies on the Bursa Malaysia in 2011. They reported that the average ARL was 97 days. Further, the regression analysis demonstrated that ARL was influenced by audit committee size, audit committee meetings, auditor type, audit opinion, total assets, and firm profitability.

Similarly, Apadore and Noor (2013) explored the association between corporate governance factors and audit report lag among 180 companies listed on the Bursa Malaysia in 2009 and 2010. On average, the sampled companies took about 100 days to complete the audit report. Of the 10 variables examined in this study, only audit committee size, ownership concentration, company size, and profitability were significantly associated with ARL.

Classifying reporting lag into three main constructs (the auditors' signature period, the interim period, and the total period), Al-Ajmi (2008) examined the factors that influenced ARL for all the Bahraini firms listed on the Bahrain Stock Exchange from 2002 to 2006. The results showed that the average audit lag was 48 days, with a minimum period of seven days and a maximum period of 154 days. Further, they reported that companies that reported higher profits, large companies, and members of highly regulated industries probably underwent audits earlier than other firms did. None of the ownership variables were significantly associated with ARL.

Azubike and Aggreh (2014) explored the impact of corporate governance factors on ARL in Nigeria. They randomly selected 40 Nigerian listed companies. The results of the OLS regression analysis demonstrated that board size and board independence are significantly associated with ARL. Further, the study revealed that the average ARL was 111 days.

Recently, (Al-Daoud et al. (2015) investigated the relationship between

corporate governance factors and the timeliness of the financial reports of 112 companies listed on the Amman Stock Exchange in 2011 and 2012 in Jordan. The study used two measures for the timeliness of financial reports: one for ARL, and the other for management report lag. Regarding ARL, the study showed that companies that have a large number of independent board members, those that combine the roles of CEO and chairperson, those that have more meetings of the boards, and those that include audit committees tend to have shorter ARL. However, the number of board members was positively associated with ARL. Further, the study reported that Jordanian companies took 68 days (on average) for issuing their audit reports.

Appendix 3 summarizes the studies that examined the corporate governance and ownership variables.

### **3.4 Studies in the context of Egypt**

Few prior studies investigated ARL in the Egyptian environment. Mohamed (1995) sought to introduce an overall framework for examining the key determinants of audit delay using a sample of 31 Egyptian public companies in 1990. The study investigated the association between nine variables and audit delay. Only three variables—listing on the stock market, extraordinary items, and type of audit report—were found to be significantly related to audit delay.

Moreover, Afify (2009) empirically examined the impact of corporate governance variables on ARL for Egyptian listed companies in 2007. The sample included the corporate annual reports of

85 companies listed on the Cairo and Alexandria Stock Exchanges (CASE). The study reported a delay of 67.21 days on average between the balance sheet date and the date of the audit report. Moreover, six of the eight variables examined were significantly related to ARL. That is, company size, profitability, board independence, and the existence of an audit committee were negatively associated with ARL, while financial sector and role duality were positively associated with ARL.

In order to compare instances of early and late audit report issuance, Eldyasty (2011) conducted an empirical study that examined the relationship between auditing efficiency indicators and ARL. The study utilized a random sample that included 120 financial statements of Egyptian listed companies during the period 2003–2011. The study found that the ARL was 61.6 days on average, with a minimum lag of 9 days, and a maximum lag of 145 days. Eight variables were investigated in two stepwise regression models: the first was related to early issuances, and the other was related to late issuances. For the early issuance model, only the variable related to deficiency in working capital had a positive significant relationship with the early issuance of audit reports. For the late issuance model of audit reports, two variables had a significant association with the late issuance of audit reports. The results showed that the qualified audit opinion and loss variables increased the delay in the issuance of audit reports.

In addition, (Saada et al. (2013) explored the determinants of ARL for 57 of the most active listed companies in

the Egyptian stock market during the period 2004–2012. The results demonstrated that the average ARL ranges from 47.89 for the mining sector to 89.22 for the technology sector. The study provided empirical evidence that leverage, financial year-end and managerial ownership increase the ARL in all the sectors, while board size decreases the ARL.

### 3.5 Comments on prior studies

The current study draws some conclusions from the prior studies reviewed in the preceding sections. Although these studies showed many similarities, there are quite a few differences among these studies on ARL. These differences are related to the country of study, study periods, samples, type of methodology, the variables examined, the results obtained, and even the definition of ARL (Bonson-Ponte et al., 2008).

Further, the notion of audit lag was introduced in the U.S. and the Western context because of the organized regulations in these countries. Few studies were conducted in the context of developing countries until the beginning of this century. Most of the studies in the context of emerging economies were conducted over the last 15 years. However, there are few studies in the Egyptian context. The current study aims to address this research gap by examining the key determinants of ARL for the Egyptian listed non-financial companies during the period 2011–2013.

Moreover, the explanatory power ( $Adj. R^2$ ) of the ARL model used in most of the prior studies ranged from 20 per cent to 30 per cent. This indicates

the need for further research to test additional variables that were not previously examined (Habib and Bhuiyan, 2011). Prior studies in the Egyptian context aimed to examine either the factors related to company characteristics (Mohamed, 1995; Eldyasty, 2011) or the corporate governance factors (Afify, 2009; and Saada et al., 2013). None of the Egyptian studies aimed to explore the impact of “audit-related factors” on ARL. Therefore, the current study examines certain “audit-related variables” that have not been investigated previously in the Egyptian context, namely, audit firm industry specialization, audit tenure, audit fees, and joint audit in relation to ARL.

## 4. Hypotheses Formulation

### 4.1 Audit-related factors

#### 4.1.1 Audit Type

Audit type refers to the type of company that audits the financial reports of the firms. Currently, audit firms are classified into two groups: the Big 4 audit companies and the small (not Big 4) audit firms. According to signaling theory, the selection of the Big 4 audit companies is a signal to the market that the audit process is performed effectively. Further, the Big 4 audit companies have more human resources, greater skills and experience, and more flexibility in scheduling to complete the audits on time compared to the smaller audit companies. Therefore, they have more incentives to finalize their audit work rapidly in order to maintain their reputation (Carslaw and Kplan, 1991; Hossain and Taylor, 1998).

Prior studies indicated contradictory results related to audit type. While some studies showed a positively significant association between auditor type and ARL (e.g., Alkhatib and Marji, 2012; Enofe et al., 2013), others indicated a negative association between them (e.g., Ashton et al., 1989; Ahmed, 2003; Al-Ghanem and Hegazy, 2011; Leventis et al., 2005; Lee and Jahng, 2008; Shukeri and Islam, 2012). However, the majority of these studies failed to provide empirical evidence for the impact of audit type on ARL (e.g., Carslaw and Kplan, 1991; Hossain and Taylor, 1998; Lai and Cheuck, 2005; Bonson-Ponte et al., 2008; Che-Ahmed and Abidin, 2008; Al-Ajmi, 2008; Afify, 2009; Eldyasty, 2011; Hashim and Rahman, 2011; Vuko and Cular, 2014; Azubike and Aggreh, 2014). Following the approach used in prior studies, the current study measures audit type using a dummy variable that takes the value “1” if the audit was performed by the Big4 audit companies (international audit companies), and “0” otherwise. Thus, the current study will test the following hypothesis:

***H<sub>1</sub>: There is a significant relationship between audit type and ARL.***

#### 4.1.2 Audit tenure

Audit tenure refers to the number of consecutive years of audit experience that the auditor has with a client. According to the U.S. General Accounting Office (GAO 2003), auditors take at least two to three years to become adequately familiar with a client’s operations and tasks. Short-tenured auditors were found to decrease the quality of

audits compared to medium-tenured auditors (Johnson et al., 2002). According to signaling theory, companies will signal their audit quality to the public through their engagement with long-tenured auditors.

Only a few prior studies examined the influence of audit tenure on ARL. Ashton et al. (1987) proposed that a new auditor needs more time to discover the client's records, operations, and internal controls and to become familiar with them, which may increase the reporting lag initially. However, they failed to provide evidence for the impact of audit tenure on ARL.

Similarly, Lee and Jahng (2008) examined the association between audit tenure and ARL in the context of Korean companies. They reported that in the initial years of the engagement, auditors spend more time to recognize the client's operations and risks, which increases the ARL. As the audit tenure increases, audit efficiency will increase simultaneously, which reduces the ARL. However, the study indicated that the relationship between audit tenure and ARL is insignificant.

Habib and Bhuiyan (2011) classified audit tenure into two variables. The first was "short audit tenure," which referred to an auditor tenure that was less than or equal to three years; the other was "long audit tenure," which referred to an auditor tenure that was greater than or equal to nine years. The results demonstrated that short audit tenure increases ARL. Moreover, in their study of listed Malaysian companies, Amirul and Salleh (2014) revealed that audit tenure did not have any influ-

ence on the ARL of Malaysian companies.

To the best of the author's knowledge, no prior studies have examined the impact of audit tenure on ARL in the Egyptian context. The current study finds that some Egyptian companies engage with an auditor for over a year. Therefore, audit tenure will be measured using a dummy variable that takes the value "1" if the auditor was engaged with the client for three years or longer, and "0", if not otherwise. The current study seeks to empirically examine the impact of audit tenure on ARL by testing the following hypothesis:

***H<sub>2</sub>: There is a significant relationship between audit tenure and ARL.***

#### ***4.1.3 Audit firm industry specialization***

The audit market has recently witnessed changes such as the rapid developments in technology, an increased level of competition, and an increase in the number of lawsuits. These changes motivated some audit firms to increase their awareness about industry specialization. Habib and Bhuiyan (2011, p.33) reported that "industry-focused audit firms' investment in technologies, physical facilities, personnel, and organization control systems improves the quality of audits for the firms' focal industries."

Therefore, industry specialist auditors will be in a unique position compared to non-specialist auditors because of the increased industry knowledge acquired by specialist auditors and their ability to spread industry-specific train-

ing costs over more clients, resulting in economies of scale. According to signaling theory, this motivates the clients whose financial statements are audited by industry specialist auditors to differentiate themselves from their peers in order to send a signal to the public about the efficiency and quality of their audits, which result from their engagement with an industry specialist auditor.

Che-Ahmed and Abidin (2008) investigated the impact of auditor industry specialization on the ARL of Malaysian public listed companies. They identified auditor specialists based on the industry market share held by the companies. Companies that earned 15 per cent or more of the total industry fee would be represented by industry specialists. In addition, the study used 20 per cent as the cut-off point as an alternative measure. The regression results for auditor industry specialization indicated that auditor industry specialization was negatively associated with ARL only when it was measured using audit fee.

Moreover, Habib and Bhuiyan (2011) assumed that industry specialist auditors who acquired more industry-specific knowledge would be able to complete audits earlier than non-specialist auditors would because of their increased efficiency. The results of the regression analysis indicated that the companies audited by industry specialist auditors gain the privilege of shorter ARL.

In Egypt, no prior study (to the best of the author's knowledge) has examined the impact of audit firm industry specialization on ARL. The current

study seeks to address this research gap. Industry specialist auditors can be identified using the audited market shares of a particular industry. Following the approach used in prior studies (e.g., Palmrose, 1986; Craswell et al., 1995; Franz et al., 1997), the current study calculates the percentage of total assets of the companies audited by the same auditor in one industry to the total assets of all the companies in this industry; this percentage is used as a proxy for audit firm industry specialization. Based on signaling theory, the following hypothesis will be tested:

***H<sub>3</sub>: There is a significant relationship between audit firm industry specialization and ARL.***

#### ***4.1.4 Audit report type***

Auditors are required to present their opinion as to whether or not the financial statements are fairly stated. Generally, there are two types of auditor opinion: unqualified and qualified (Ahmed and Hossain, 2010).

Many prior studies investigated the relationship between auditor opinion and ARL. Some studies identified auditor opinion as one of the factors that affected the extent of audit work required. This was termed "other work-related factors" (Bamber et al., 1993; Jaggi and Tsui, 1999). These factors indicated that additional effort and time were required to perform audits in order to comply with generally accepted accounting principles (GAAP), generally accepted auditing standards (GAAS), and other professional standards. Signaling theory indicates that companies receiving a qualified opinion may view this as "bad news"; hence, this would

slow down the audit process because firms would delay responding to the auditors' requests.

Ahmed and Hossain (2010) proposed that issuing a qualified opinion would lead auditors to spend more time on the audit as more procedures need to be followed to confirm their opinions. Therefore, it is assumed that qualified opinion may increase ARL because of the conflict that might happen between the auditors and their clients.

The results reported in prior studies about the association between audit report type and ARL are contradictory. Many prior studies revealed that qualified opinion increases ARL (Carslaw and Kplan, 1991; Bamber et al., 1993; Schwartz and Soo, 1996; Lee and Jahng, 2008; Che-Ahmed and Abidin, 2008; Ahmed and Hossain, 2010; Amirul and Salleh, 2014). However, other studies reported contradictory results; they reported that qualified opinion decreases ARL (Ashton et al., 1989; Jaggi and Tsui, 1999; Reza and Poudeh, 2014; Banimahd et al., 2012). On the other hand, a few studies (e.g., Lai and Cheuck, 2005; Bonson-Ponte et al., 2008; Vuko and Cular, 2014) reported an insignificant association between the type of auditor opinion and ARL.

In the Egyptian context, Eldyasty (2011) provided empirical evidence for the significant impact of the type of auditor opinion on ARL. The current study will measure the type of audit report using a dummy variable that takes the value "1" for unqualified opinions, and "0" for qualified opinions. Based on the preceding discussion, that the following hypothesis is postulated:

***H<sub>4</sub>: There is a significant relationship between audit report type and ARL.***

#### ***4.1.5 Audit fees***

Companies pay fees to the auditors to compensate their efforts and the time consumed in the audit process. According to the agency theory, the information asymmetry between shareholders and corporate managers leads to the hiring of auditors to provide independent assurance to the investors about the fair disclosure of the companies' financial statements and to reduce audit risks. Therefore, Leventis et al. (2005) argued that auditor fees will be related to more efficient timing of audit services. Further, higher audit fees may be associated with more complex audit processes because the audit fees serve as an indicator of the time and effort devoted to the audit work (Nig and Tai, 1994).

Moreover, Ireland (2003, p.17) stated that "companies paying higher fees—as an indicator for a high audit risk assessment by the auditors—to their audit may be more likely to receive modified audit opinion than those paying small audit fees." The audit work of large companies consumes more time than the audit of smaller ones because of the difference in the absolute amount of inventory and receivables, the proportion of assets in inventory and receivables, and the number of subsidiaries within and outside the country. Therefore, it was assumed that the audit fees for large companies would be higher than the audit fees for smaller firms (Modugu et al., 2012). Thus, reducing audit risks by increasing audit testing work, involving more senior staff, and

negotiating with the management about the possible modifications might indicate an increase in audit fees, thereby increasing ARL (Leventis et al. 2005).

In contrast, accelerating the audit process could be more expensive because this would involve concentrated audit resources (e.g., additional staff or overtime work) or higher auditor opportunity cost. Further, the prompt issuance of auditing reports is taken to be an indicator of audit quality, measured by the timeliness of the audit services. Consequently, in order to motivate the auditor to issue the auditing reports promptly, companies will increase their auditor fees, which would reduce the ARL.

The results reported in prior studies related to the impact of audit fees on the ARL are relatively few and mixed. While Leventis et al. (2005) and Modugu et al. (2012) indicated that audit fees would reduce the ARL, Hossain and Taylor (1998) found this relationship to be insignificant.

Audit fees have not been investigated previously as a determinant of ARL in the Egyptian context. The current study aims to test the impact of audit fees on the ARL of Egyptian listed companies. Audit fees will be measured by the absolute amount paid to the auditors by the Egyptian companies. The following hypothesis will be tested:

***H<sub>5</sub>: There is a significant relationship between audit fees and ARL.***

#### ***4.1.6 Joint Audit***

Joint audit may save the time and effort required to finalize audits because of the increase in the number of

staff members and facilities available to audit the companies. This may reduce audit risk, and hence, decrease ARL. Further, joint auditors suit the requirements of large companies, which are characterized by complex activities and subsidiaries. Sharing the work may minimize the time consumed to audit such complex operations, which would reduce the ARL.

The reliance on another auditor may increase the conflict among the auditors during the audit process. Each auditor may have his/her unique procedures for auditing the financial statement of the companies. This may increase the time taken to issue their reports. Moreover, joint auditors increase the possibility of the issuance of modified opinions, which in turn increases the time taken by the clients to respond to these modifications; thus, the ARL is increased.

In the Egyptian context, some companies were found to use joint audit for their audits. As the joint audit variable seems to have been investigated rarely in the Egyptian context, the current study extends the prior studies by examining the impact of joint audit on ARL. Joint audit will be represented with a dummy variable that takes the value "1" if the company is found to have joint audit, and "0", otherwise. Based on these arguments, the following hypothesis is postulated:

***H<sub>6</sub>: There is a significant relationship between joint audit and ARL.***

#### **4.2 Control Variables**

Six control variables will be tested in the current study.

### **4.2.1 Company size**

Prior studies reported contradictory results regarding the relationship between company size and ARL. Large companies may have complex activities, thereby requiring more effort and time to finalize the audits work. Therefore, it can be assumed that company size will increase ARL. Ashton et al. (1987) confirmed this result. However, many other studies reported that larger companies have strong internal controls that the auditor relies on, which in turn, reduces the audit work, thereby reducing ARL (e.g., Ashton et al., 1989; Carslaw and Kplan, 1991; Ahmed, 2003; Afify, 2009; Al-Ghanem and Hegazy, 2011; Modugu et al., 2012).

### **4.2.2 Leverage**

The nature of the relationship between ARL and leverage is ambiguous. Some studies argued that a high level of leverage may raise the concerns of auditors about the reliability of the financial statements because of the higher possibility of management fraud related to this higher level of leverage. Such concerns would tend to increase the time taken for the audit report (Carslaw and Kplan, 1991). Moreover, auditing debt may require more time because of the increased number of debtors in the case of a higher level of leverage, which increases the ARL. Many studies have reported evidence for this relationship (e.g., Lee and Jahng, 2008; Ahmed and Hossain, 2010; Alkhatib and Marji, 2012; Saada et al., 2013). However, other studies (e.g., Hossain and Taylor, 1998; Modugu et al., 2012; Hajiha and Rafiee, 2011; Eldyasty, 2011)

found the relationship between leverage and ARL to be insignificant.

### **4.2.3 Number of subsidiaries**

Companies with a large number of subsidiaries may be characterized by increased complexity when performing the audit process. Therefore, it is assumed that a greater number of subsidiaries of a company will increase the time taken for the audit report. Many studies reported findings that were in line with this argument (e.g., Ashton et al., 1987; Jaggi and Tsui, 1999; Modugu et al., 2012; Habib and Bhuiyan, 2011).

### **4.2.4 Managerial ownership**

A few empirical studies suggested that companies with a high level of managerial ownership are characterized by lower ARL. This may be a reflection of the low pressure exerted by the management to report timely information because of the ease of access available to the management (Ashton et al., 1987; Carslaw and Kaplan, 1991; Bambers et al., 1993; Che-Ahmed and Abidin, 2008). Therefore, it is hypothesized that an increase in the proportion of managerial ownership will increase ARL.

### **5.2.4 Government ownership**

Government agencies and institutions as external partners may exert exaggerated pressure on the companies to report timely information to the public, which would reduce the ARL. Large companies are in the public eye, which motivates these companies to reduce the audit lag as much as possible. Therefore, it is postulated that companies with large government ownership will enjoy shorter ARL.

### 5.2.5 Private ownership

Since large external private ownership is associated with an acute need for timely information, there may be increased pressure on both the company and the auditors to start and complete the audit process as rapidly as possible (Carslaw and Kplan, 1991). Consequently, it is assumed that increased private interest in the ownership structure of the companies will reduce ARL.

## 5. Sample and Variable Measurement

### 5.1 Sample

The study's sample was drawn from the annual reports of all the Egyptian listed non-financial companies during the period 2011–2013. Following the approach used in prior studies (e.g.,

Leventis et al., 2005; Mohamed-Nor et al., 2010), the current study excluded

42 financial companies and banks because of their unique characteristics and significantly different operations, which may require special audit efforts. In addition, seven companies with missing data were excluded. The final sample included 171 companies, with 513 firm-year observations covering the period 2011–2013. The data related to ARL was obtained from these annual report observations.

### 5.2 Measurement of the variables

The main dependent variables of the current study is ARL, which is measured by the number of days that passed between the balance sheet date and the date of the signed auditor's report.

Six main audit-related factors are examined in the current study, together with six control variables. The operationalization of these variables is illustrated in table 2.

**Table 2: Measurement of the explanatory variables**

Variables	Acronym	Proxy
<b>Audit-related factors</b>		
Auditor Type	Aud	1= big 4 0= others
Auditor tenure	Tun	1= if the auditor engaged with the client for more than or equal three years. 0= if not
Auditor Industry specialist	Spc	the percentage of the total assets for the companies audited by the same auditor in one industry to the total assets of all companies in this industry
Auditor opinion	Opn	1= unqualified 0= Qualified
Auditor fees	Fees	The actual amount paid to the auditor.
Joint Auditor	Joint	1= If there is joint auditor 0= if not
<b>Control Variables</b>		
Company size	Size	Total assets
Leverage	Lev	Total liabilities/Total owners equity
Number of Subsidiaries	CompX	The number of subsidiaries
Managerial Ownership	Man Own	Percentage of shares held by management
Governmental Ownership	Gov Own	Percentage of shares held by government
Private Ownership	Priv Own	Percentage of shares held by private institution

### 5.3 Research model

The current study carries out ordinary least squares (OLS) regression model to test the research hypotheses. The model explores the influencing of

the audit-related factors on the ARL in the Egyptian environment. Accordingly, the research model can be presented as follows:

$$\text{ARL} = \beta_0 + \beta_1 \text{Aud} + \beta_2 \text{Tun} + \beta_3 \text{Spc} + \beta_4 \text{Opn} + \beta_5 \text{Fees} + \beta_6 \text{Joint} + \beta_7 \text{Size} + \beta_8 \text{Lev} + \beta_9 \text{CompX} + \beta_{10} \text{Mag-Own} + \beta_{11} \text{Gov-Own} + \beta_{12} \text{Priv-Own} + \varepsilon$$

#### Where:

**ARL** = Audit report lag (the number of days elapsed form the end of the balance sheet date to the signed audit report date).

**$\beta_0$**  = the intercept.

**Aud** = Audit Type.

**Tun** = Audit Tenure.

**Spc** = Audit firm Industry Specialization.

**Opn** = Audit report type.

**Fees** = Audit Fees.

**Joint** = Joint Audit.

**Size** = company size.

**Lev** = leverage.

**CompX** = Complexity.

**Mag-Own** = managerial ownership. **Gov-Own** = governmental ownership. **Priv-Own**=Private ownership.  **$\varepsilon$** : The residual value.

## 6. Data Analysis and Results

### 6.1 Descriptive results

The descriptive statistics for the continuous and dummy variables are shown in Table3. On average, the number of days between the balance sheet date and the signed audit report date for the Egyptian non-financial listed companies is 77 days, with a minimum of 8 days and a maximum of 240 days (variation of 30.5). Further analysis indicated that approximately 81percent of the Egyptian listed companies issued their audit reports within the regulatory deadline, while 19 per cent of the companies breached this deadline. That is, most of the Egyptian listed companies

issued their audit reports within the regulatory deadline. The mean ARL in the Egyptian context is shorter than what was reported in New Zealand (Carslaw and Kplan, 1991:88 days), in Greece (Leventis et al., 2005:98 days), in Spain (Bonson-Ponte et al., 2008: 81.5 days),in Bangladesh (Ahmed and Hossain, 2010:101 days), in Iran (Banimahd et al., 2012:83), in Nigeria (Enofe et al., 2013:99.6 days), in Croatia (Vuko and Cular, 2014:106 days), and in Malaysia (Amirul and Salleh, 2014: 97 days). However, the mean ARL in the Egyptian context is longer than what was reported in the U.S.

(Ashton et al.,1987:62.5 days), in Canada, (Ashton et al., 1989:55 days), in Kuwait, (Al-Ghanem and Hegazy, 2011:62 days), in Jordan (Alkhatib and

Marji, 2012: 41 days), and in Egypt (Afify, 2009: 67 days; Eldyasty, 2011: 62 days).

**Table 3: Descriptive analysis of both dependent and independent variables**

Variables	Mean	Min.	Max.	Std. Dev.
<b>Panel A: Dependent V.</b>				
ARL	76.74	8	240	30.524
<b>Panel B: Independent V.</b>				
Spc	.21428	.0004	.991	.262191
Fees	207348.99	10000	15268061	1265070.2
Size	2831879900	20246516	68222900000	8086368473.08
Lev	.42718	.003	2.261	.261914
CompX	2.99	0	65	8.655
Man-Own	.15930	0	.965	.250551
Gov-Own	.20085	0	.957	.299165
Priv-Own	.24733	0	.997	.312962
<b>Panel C: Dummy Independent V.</b>				
	Frequency		%	
Aud : Big4	172		33.5	
Not Big4	341		66.5	
Tun :				
The auditor engaged with the client for more than or equal three years.	403		78.6	
The auditor engaged with the client for less than three years.	110		21.4	
Opn : Un-qualified	289		56.3	
Qualified	224		43.7	
Joint:				
The auditor reliance on other auditor.	141		27.5	
The auditor not reliance on other auditor	372		72.5	

Note: ARL= Audit report lag, Aud = Audit Type, Tun = Audit Tenure, Spc = Audit firm Industry Specialization, Opn = Audit report type, Fees = Audit Fees, Joint = Joint Audit, Size =company size, Lev = leverage, CompX= Complexity, Man-Own= Managerial ownership, Gov-Own = Governmental ownership, Priv-Own = Private ownership

Egyptian listed companies pay their auditors L.E. 207348.99 as audit fees (on average). Further, most of the Egyptian listed companies engage with their auditors for three years or more (79 per cent), which implies that most of the sampled Egyptian companies do not prefer to change their auditors. Additionally, most of the sampled compa

nies were audited by non-Big 4 audit companies (66 percent). Further, the auditors of the Egyptian listed non-financial companies preferred not to rely on other auditors (73 per cent) and issued qualified opinions (44 percent).

Table 4 indicates that the mean of the ARL for 2011 and 2012 was approximately the same (75 days). How-

ever, the average ARL for 2013 was higher (80 days).

**Table 4: The mean of ARL for study's period**

	2011	2012	2013
<b>ARL</b>	74.6149	74.5575	79.6897

## 6.2 Univariate analysis results

Table 5 shows that seven variables were significantly correlated with ARL. Specifically, company size, leverage, and complexity were positively corre-

lated with ARL, while auditor opinion, audit fees, joint audits, and managerial ownership structure were negatively correlated.

**Table 5: Correlation matrix of study's variables**

	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)
(A)	-.01	-.02	.05	-.31**	-.18**	-.13**	.23**	.26**	.14**	-.19**	.09	-.01
(B)		.06	.42**	.19**	.34**	.13**	.43**	.12**	.51**	.06	-.22**	.33**
(C)			.10*	-.01	-.02	.07	.14**	.12*	-.01	-.02	.19**	-.02
(D)				-.12**	.02	.15**	.49**	.13**	.29**	-.09	.10*	.13**
(E)					.41**	-.01	-.05	-.12**	.14**	.18**	-.41**	.27**
(F)						.23**	.22**	-.04	.29**	.15**	-.39**	.27**
(G)							.14**	-.11*	-.02	.07	.10*	-.03
(H)								.23**	.57**	-.10*	.14**	.20**
(I)									.18**	-.10*	-.01	.16**
(J)										-.02	-.25**	.27**
(K)											-.37**	-.24**
(L)												-.39**

Note: A: ARL, B: Aud, C: Tun, D: Spc, E: Opn, F: Fees, G: Joint, H: Size, I: Lev, J: Comx, K: Man-Own, L: Gov-Own and M: Priv-Own

Moreover, the multicollinearity problem was checked using a correlation matrix with the variance inflation factors (VIF) and tolerance values from the regression results. Tables 5 and 6 summarize these results.

Table 5 shows that there is no serious multicollinearity among the independent variables. The rule of thumb

for checking multicollinearity is whether the correlation coefficient exceeds 0.80, (Gajarati, 2003, p.359). In addition, Table 6 indicates that all the VIF values are below 10, and the tolerance values are greater than 0.1; these results indicate that there is no multicollinearity among the independent variables (Field, 2009).

**Table 6: VIF and Tolerance values for the independent variables**

Variables	Tolerance	VIF
Aud	.579	1.726
Tun	.928	1.077
Spc	.662	1.510
Opn	.691	1.448
Fees	.622	1.608
Joint	.848	1.179
Size	.451	2.218
Lev	.872	1.147
Compx	.507	1.972
Man-Own	.650	1.540
Gov-Own	.434	2.302
Priv-Own	.578	1.730

### 6.3 Multivariate analysis results

For the multivariate analysis, the study conducted a regression model to test the relationship between “audit-related factors” and ARL. The model is

significant at  $p < .0001$ , which indicates that the model explains the variation in the dependent variable (ARL). Table 7 summarizes the results of this model.

**Table 7: OLS results of the association between auditors related- factors and ARL**

Model	Coef.	T Statistic	P value
CONSTANT	-7.776	-.394	.694
Aud	-2.976	-.963	.831
Tun	-2.976	-.963	.336
Spc	<b>-14.469***</b>	<b>-2.572</b>	<b>.010</b>
Opn	<b>-15.940***</b>	<b>-5.456</b>	<b>.000</b>
Fees	<b>-.983***</b>	<b>-3.043</b>	<b>.002</b>
Joint	<b>-5.624*</b>	<b>-1.925</b>	<b>.055</b>
Size	<b>5.472***</b>	<b>5.088</b>	<b>.000</b>
Lev	<b>16.719***</b>	<b>3.389</b>	<b>.001</b>
Compx	.736	.648	.517
Man-Own	<b>-19.868***</b>	<b>-3.339</b>	<b>.001</b>
Gov-Own	<b>-18.456***</b>	<b>-3.032</b>	<b>.003</b>
Priv-Own	-7.251	-1.433	.152
P value	0.000		
F-Ratio	12.814		
<b>Adj. R<sup>2</sup></b>	22 per cent		

Note: \*, \*\* and \*\*\* indicate significant at 10per cent, 5per cent and 1per cent, respectively

## 6.4 Discussion of the results

The regression results for Model 1 show that the adjusted  $R^2$  is 22 per cent, which implies that 22 per cent of the variation in the ARL of the Egyptian listed companies can be explained by the variation in the independent variables of the study. The adjusted  $R^2$  of the current study is comparable with what was reported in prior studies (e.g., Schwartz and Soo, 1996; Lai and Cheuck, 2005; Bonson-Ponte et al., 2008; Lee and Jahng, 2008; Ahmed and Hossain, 2010; Vuko and Cular, 2014).

The results support hypotheses  $H_3$ ,  $H_4$ ,  $H_5$ , and  $H_6$ . For hypothesis  $H_3$ , the results show that the coefficient of audit firm industry specialization is significant at the 1 per cent level, which implies that the Egyptian non-financial listed companies that are audited by industry specialist auditors enjoy shorter ARL. Industry specialist auditors have significant industry knowledge and experience, leading them to complete their audits earlier compared to their non-specialist peer; hence, the ARL is reduced. This result is consistent with the results reported by Che-Ahmed and Abidin (2008) and Habib and Bhuiyan (2011), who found that the association between ARL and industry-specialist auditors is significantly negative. Therefore, hypothesis  $H_3$  is accepted in the current study

The results of the multivariate analysis related to the auditor opinion variable indicate the positive impact of qualified opinion on ARL at the 99 per cent level of confidence. The findings indicate that the qualified audit reports of the Egyptian non-financial listed co-

mpanies increase the gap between the balance sheet date and the date of issuance of such audit reports. The issuance of qualified audit reports requires more effort and time from the auditors for the completion of the audit process, which will increase the ARL. This finding conforms to the findings of prior studies (e.g., Carslaw and Kplan, 1991; Bamber et al., 1993; Schwartz and Soo, 1996; Lee and Jahng, 2008; Ahmed and Hossain, 2010; Amirul and Salleh, 2014). Therefore, hypothesis  $H_4$  is accepted in the current study.

In terms of audit fees, the empirical findings demonstrate that the Egyptian listed non-financial companies that paid higher audit fees have shorter ARL (at a confidence level of 99 per cent). The negative association between companies that paid high auditor fees and ARL may be attributed to the eagerness of the auditors to reduce audit risk by increasing their testing work and the audit team's involvement in order to justify the increase in auditor fees; consequently, the ARL increases. Similar results were documented by Leventis et al. (2005) and Modugu et al. (2012). Therefore, hypothesis  $H_5$  is accepted.

The results of the regression analysis show a negative association between joint audit and ARL at the 90 per cent confidence level. This implies that the ARL of Egyptian listed non-financial companies will decrease when these companies are jointly audited.

Reliance on an additional auditor may suit the requirements of large Egyptian listed companies that are characterized by complex activities and multiple subsidiaries. To reduce the audit

risks for these companies, the audit of these companies is likely to be performed jointly, which reduces the ARL. Therefore, hypothesis  $H_6$  is accepted.

Regarding the control variables, the regression analysis results illustrate that the ARL is longer for large Egyptian companies. This finding is contrary to the findings of most prior studies (e.g., Schwartz and Soo, 1996; Jaggi and Tsui, 1999; Ahmed, 2003; Lai and Cheuck, 2005; Afify, 2009). However, some prior studies reported results similar to that of the current study (e.g., Ashton et al., 1987; Banimahd et al., 2012).

In addition, the ARL is found to be much higher for highly leveraged Egyptian companies. This result is consistent with the results of many prior studies (Carslaw and Kplan, 1991; Al-Ajmi, 2008; Ahmed and Hossain, 2010; Alkhatib and Marji, 2012; Saada et al., 2013; Vuko and Cular, 2014).

Moreover, the study finds that managerial ownership has a significant influence on the ARL of a company; i.e., a high level of managerial ownership is related to a shortening of the ARL. This result is inconsistent with the results of previous studies (Che-Ahmed and Abidin, 2008; Saada et al., 2013). This unexpected result could be attributed to the higher proportion owned by the management in the companies in the sample. In such contexts, the management would have incentives to reduce both audit delay and reporting delay in responding to the investors, unions, and regulatory agencies or to maximize their interests by disclosing good news early, which may lead to an increase in the price of their holding shares. In ad-

dition, the ARL is found to be shorter for Egyptian companies that have a high level of government ownership. This result is consistent with what Ashton et al. (1987) had reported.

Finally, the multivariate analysis fails to provide empirical evidence for the impact of audit type, auditor tenure, complexity, and private ownership on ARL in the Egyptian context.

## **7. Conclusions, Limitations, and Directions for Further Research**

Audit report lag (ARL) represents one of the key determinants of such timeliness. Further, it represents an indicator of audit efficiency for various stakeholders. Many prior studies in the context of both developing and developed countries examined different factors that influence ARL.

The current study extends prior research on ARL by examining the impact of “audit-related factors” on ARL using a sample of Egyptian listed non-financial companies during the period 2011–2013. To the best of the author’s knowledge, no prior studies have investigated similar factors in the Egyptian context. The study introduces four audit-related factors to the analysis, namely, audit firm industry specialization, audit tenure, audit fees, and joint audit. The relationship of these variables with ARL was not previously examined in the Egyptian context.

The descriptive results indicate that the sampled listed Egyptian companies take 77 days (on average) from the end of the balance sheet date to the date of signed audit report, with a minimum interval of 8 days, and a maximum in-

terval of 240 days. Moreover, the results reveal that approximately 81 per cent of the listed sample companies issued their audit reports within the regulatory deadline; only 19 per cent of the companies breached this deadline.

The current study used an OLS model to examine the impact of "audit-related factors" on ARL. The findings illustrate that 8 of the 12 variables that were studied are significantly associated with ARL. All the variables indicate a negative sign for ARL, except company size and leverage. This implies that among the listed sample companies, large and highly leveraged Egyptian companies with qualified audit reports will tend to increase their ARL. In contrast, listed companies that have high levels of managerial and government ownership and have paid high fees to their auditors who are mainly joint auditors and industry specialists will tend to decrease their ARL.

The current study has a few limitations. First, the study mainly focuses on non-financial companies. Future research can explore the key determinants of ARL for financial and non-financial Egyptian companies. Second, as is the case in any other empirical accounting research, many variables were not considered in the current study. Future research in the Egyptian context could extend the research on ARL by examining some new corporate governance variables, such as audit committee variables.

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## Appendix 1: studies examined company characteristics in related to ARL in developed and countries developing

Study	Country /Sample /Period	Average Audit Daley (days)/Adj. R <sup>2</sup>	Dependant V.	Independent Variables	Results
Dyer and Mchugh, 1975	Australia/120 listed companies/1971	Sixty-six percent of the mean total lag was consumed in pre-audit delay Adj. R <sup>2</sup> =NA	AL= the open interval of the number of days from the year-end to the date recorded as the opinion signature date in the auditors' report	Company Size Financial year-End Profitability	- + -
Givoly and Palmon, 1982	USA /210 listed companies/1960-1974	From 62 to 42 during the studied period Adj. R <sup>2</sup> =from 19 to 26	RL= the number of days from the year-end to the date to release audited statements	Company Size Types of News Complexity	NS - -
Ashton et al.,1987	USA/488 companies/ 1982)	62.5 Adj. R <sup>2</sup> =26.5	AD= the length of time from a company's fiscal year-end to the date of the auditor's report	Company Size Industry Type Public/non-public company Financial year-End Quality of internal controls Complexity	+ NS - NS - +
Ashton et al., 1989	Canada/465 listed Companies/ 1977– 1982	55 Adj. R <sup>2</sup> = range from 8.8 to 12.6	AD= the number of calendar days from fiscal year-end to the audit report date	Company Size Industry Type Financial year-End Audit firm size Sign of net income Extraordinary items Contingencies Audit opinion	-(3years) + (all) -(2 years) -(1 year) +(5 years) +(all) +(2 years) -(4 years)
Carslaw and Kaplan, 1991	New Zealand/ 263and 239 public companies/ 1987 and 1988	88 (1987) Adj. R <sup>2</sup> =17 95 (1988) Adj. R <sup>2</sup> =14.3	AD= the number of days between the date of the financial statements and the date of the auditor's report.	Company Size Industry Type Sign of net income Extraordinary items Audit opinion Audit firm size Financial year-End Company Ownership Debt proportion	-(all) -(1988) -(all) +(1987) +(1987) NS NS -(1987) +(1988)
Hossain and Taylor, 1998	Pakistan/103 listed companies/ 1993	143.28 Adj. R <sup>2</sup> =30.6	AD= the time from a company's accounting year end to the date of the auditor's report.	Company Size Debt to equity ratio Profitability Subsidiaries of multinational companies Audit firm size Audit fees	NS NS NS - NS NS
Jaggi and Tsui,1999	Hong-Kong/393 listed companies/	105.88 Adj. R <sup>2</sup> =14.16 (model 1)	AL= The number of days between	Family ownership controlled	NS

	1991– 1993	Adj. R <sup>2</sup> =14.44 (model 2)	the client's fiscal year-end and the audit report date	Financial condition Structured audit approach number of subsidiaries Industry Type Extraordinary items Loss Audit opinion Company Size News	+ + + NS NS NS - - NS
Ahmed, 2003	Bangladesh, India and Pakistan/558 annual reports for listed companies/1998	Bangladesh (162 days) India (92 days) Pakistan (145)days. Adj. R <sup>2</sup> =10.2	AL= interval of days between the balance sheet closing date and the signed date of the auditor's report stated in the corporate annual report.	Company Size Sign of Earning Financial Condition Audit firm size Financial year-end	- + NS - +
Al-Ghanem and Hegazy, 2011	Kuwait/ 149 and 177 listed companies/ 2006 and 2007	57 (2006) 62 (2007) Adj. R <sup>2</sup> =39.2(2006) Adj. R <sup>2</sup> =34.7(2007)	AD= the number of days between the end of the financial year and the date of signed auditor report	Company Size EPS Industry type Audit firm size Leverage Liquidity	-(all) NS NS -(2007) -(2006) -(2006)
Modugu et al., 2012	Nigeria/20 quoted companies / 2009 to 2011	minimum 30 days and maximum 267 days Adj. R <sup>2</sup> =68.6	AL= the interval of days between balance sheet date and the date of auditor's report	Company Size Subsidiaries Debt to Equity International link of audit firms Audit fees Industry Type	- + NS NS - NS
Alkhatib and Marji, 2012	Jordan/137 listed companies/2007	41 days Adj. R <sup>2</sup> =NA	AL= the number of days from the company's fiscal year to the date of signed and authenticated auditor report	Company Size Audit type Leverage Profitability	NS +(Sv.) +(Ind.) NS
Reza and Poudch, 2014	Iran/96 listed companies/ 2007-2011	NA Adj. R <sup>2</sup> =18.3 (EGLS model) Adj. R <sup>2</sup> =52.9 (GMM model)	AD= The number of days from fiscal year-end to audit report date.	Short-term Debt Maturity Company Size Leverage Tobin's Q Capital Intensity Auditor opinion	+(all) NS -(all) -(all) NS -(all)

**Appendix 2: studies examined audit related factors in related to ARL in developed and countries developing**

Study	Country /Sample /Period	Average Audit Daley (days)/Adj. R <sup>2</sup>	Dependant V.	Independent Variables	Re-sults
Bamber et al., 1993	USA/972 compa-nies/-1983 -1985	40 days Adj. R <sup>2</sup> =43	AL= the number of days between the client's fiscal year-end and the audit report date	Company Size Ownership Bankruptcy Number of lines of bu-siness Extraordinary Loss Audit opinion Earnings news Structured Audit Industry Type	- - + NS  + + + + NS + -
Schwartz and Soo,1996	USA/1,800/1988-1993	60.13 Adj. R <sup>2</sup> =22.4	AL= the number of days between fiscal year-end and the audit report date	Auditor Change Structured Audit Extraordinary Loss Going-Concern Auditor Opinion Financial Sector Fiscal-year Auditor Type Company Size Bankruptcy	- +  + + + + - NS - - - +
Knechel, and Payne, 2001	International companies/ 450 /1991	68.09 days Adj. R <sup>2</sup> =32	AL= the number of days clapsing between the end of the fiscal year and the completion of the audit	Fiscal year-end Public Company Size Financial Sector Geographic dispersion of operations Extent of client delays Timing of audit work Engagement hours Total audit hours related to partner and manager time management advisory services provided tax services provided	+ - NS NS - + - + + - - +

Lai and Cheuck, 2005	Australia/ 369 companies/2011	73 Adj. R <sup>2</sup> = 16.4 (model 1) Adj. R <sup>2</sup> = 13.6 (model 2)	AL= number of days from fiscal year-end to audit report date	Auditor Rotation Auditor rotation within Big 5 or none Audit rotation from non-Big 5 to Big 5 Auditor rotation from Big 5 to non-Big 5 Company Size Earning News Loss Number of subsidiaries Financial Sector Extraordinary Auditor Opinion Going-Concern Bankruptcy Fiscal-year Auditor Type Structured Audit Non-audit services	+ - + NS - NS NS + NS NS NS + + - NS NS NS
Leventis et al., 2005	Greece/ 171 listed Companies/2000	98 days Adj. R <sup>2</sup> =24.3	AL= the number of days from the end of the company's financial year to the date of the audit report	Auditor Type Number of remarks Audit Fees Extraordinary Company Size Ownership Profitability Gearing Number of Subsidiaries Manufacturing Sector Uncertainty in the audit report Other auditor Auditor change	- + - + NS NS NS NS NS NS + NS NS
Bonson-Ponte et al., 2008	Spain/105 companies/20-02-2005	81.5 days Adj. R <sup>2</sup> = 19.02	AD= the close of the accounting period and the date of signing of the audit report	Regulatory pressures Auditor Type Auditor Opinion Relative Size Change in regulations	- NS NS - NS
Habib and Bhuiyan, 2011	New Zealand/502 listed compa-	61 days Adj. R <sup>2</sup> = range from 25	AL= the period between a company's fiscal year end	Financial Year Financial Sector	NS +

	nies/2004-2008	to 27 in three models	and the audit report date	Company Size Loss Bankruptcy Subsidiaries Non-audit service fees Auditor Tenure Ownership IFRS mandatory adoption	- + NS + NS + + +
Vuko and Cular, 2014	Croatia/ /2008-2011	106 days Adj. R <sup>2</sup> = 17	AD=the length of time from the fiscal year-end to the audit report date	Audit firm type Audit opinion Profitability Leverage Audit effort Absolute level of total accruals Company size Audit committee	NS NS - + NS NS - -
Lee and Jahng, 2008	Korea/ 1537 listed companies/1999 - 2005	45.71 Adj. R <sup>2</sup> = 13.45 (Model A) Adj. R <sup>2</sup> = 15.78 (Model B)	AL= time period between a company's fiscal year-end and the audit report date	Abnormal Audit fees Non-audit Service fees Auditor tenure Auditor Type Auditor Opinion Company Size Profitability Leverage Loss Fiscal Year –End number of subsidiaries Cross-listing proportion of inventory and receivables to total assets extraordinary Ownership	NS - NS - - - - + + NS + - + + +
Ahmed and Hossain, 2010	Bangladesh/87 listed companies/2007	101 Adj. R <sup>2</sup> = 18.5	AL= the number of days from the end of the accounting year to the date of the audit report	Auditor Type Auditor Change Type of Audit Report Financial Sector Profitability Leverage Extraordinary Company Size	- NS + - - + NS -

Hajiha and Rafiee, 2011	Iran/57 listed companies-/2005-2009	NA Adj. R <sup>2</sup> = 51.4	AD= the number of days between a firm's fiscal year-end and the audit report date	Competence Objectivity Internal Audit Size Company Size Leverage Auditor Change Going-Concern	- - NS NS NS NS NS
Banimahd et al., 2012	Iran/243 listed companies/2002-2010	83.11 Adj. R <sup>2</sup> = 7.5	AL= the difference between the date of audit report and the end of fiscal year	Auditor Change to private audit firm Auditor Change from private audit firm Profitability Leverage Company Size Audit Report Type	+ NS NS NS + +
Enofe et al., 2013	Nigeria/ 50 randomly list-ed companies/2011	99.68 Adj. R <sup>2</sup> =2	AL= the elapsed time between the close of a fiscal year and the end of audit fieldwork	Audit Firm Rotation Audit Fees Audit Firm Size Company Size Fiscal Year End	NS NS NS + NS NS
Amirul and Salleh, 2014	Malaysia/ 257 public list-ed companies/2009-2010	96.65 (2009) 99.5 (2011)	AL= the length of time between the company's financial year-end and the date of auditor's report	IFRS Fiscal Year-End Financial Position Company Size Audit Opinion Audit Tenure	+ NS + - + NS

### Appendix 3: studies examined corporate governance and ownership factors in related to ARL in developed and countries developing

Study	Country /Sample /Period	Average Audit Daley (days)/Adj. R <sup>2</sup>	Dependant V.	Independent Variables	Results
Che-Ahmed and Abidin, 2008	Malaysia/343 companies/1993	114 Adj. R <sup>2</sup> = 20	AD= number of days from the financial year-end to the date of audit report	Financial sector Company Size Number of subsidiaries Total of inventory and receivables divided by total assets Leverage Profitability directors' shareholding Type of auditor Year- end	NS NS + NS NS - + NS NS +



				Firm Performance	NS
Apadore and Noor, 2013	Malaysia/ 180 listed companies/-2009-2010	100 Adj. R <sup>2</sup> = 11	AL= the number of days from the company's year end to the date of auditor's report	Ownership Internal Audit Investment Board independence Audit Committee Independence Audit Committee Meetings Audit Committee Expertise Audit Committee Size Company Size Types of Auditors Profitability	+ NS NS NS NS NS - - NS -
Al-Ajmi, 2008	Bahrain/229 listed companies/1992-2006	48 Days Adj. R <sup>2</sup> = range from 42 to 45	AL= the number of days from the year-end to the time when the auditors sign the report	Auditor Type Leverage Company Size Profitability Proportion of ordinary shares held by substantial shareholders The number of shareholders owning 5% or more Accounting Complexity Industry Type	NS + - - NS NS NS -
Azubike and Aggr-eh, 2014	Nigeria/ 40 listed companies/2010-2012	111 Days Adj. R2 = 41.78	AT= the number of days between a firm's fiscal year-end and the report date	Auditor Type Board independence Board Size	Ns + +
Al-Daoud et al., 2015	Jordan/ 112 listed companies/2011-2012	68 Days Adj. R2 = 19.6	AL= the number of days from the financial year-end to the date the auditor signs the audit report	Board Independence Board Size CEO Duality Board Financial Expertise Board Diligence Audit committee Industrial Sector	- + - NS - - NS