

# The Effect of Earnings Volatility on the Audit Report Lag, Considering the Role of the Audit Quality

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*Abstract*— Timely issuance of financial statements by companies is one of the important dimensions of financial reporting that plays a key role in the capital market and investor decisions. Delays in the audit report endanger the quality of information due to failure to provide timely information to shareholders. Earnings volatility, which is one of the time series characteristics of earnings quality, is caused by several factors. More volatility leads to higher risk. In the present study, the effect of audit quality on the severity of the effects of earnings volatility and the delay of the audit report of companies listed on the Tehran Stock Exchange has been done. To analyze the research data and hypotheses, a sample of 132 companies listed on the Tehran Stock Exchange was selected by systematic removal method in the period 2013 to 2019. Data analysis was performed using multivariate regression model and hybrid data. The results show that earnings volatility have a positive effect on audit report lag. In other words, the more earnings volatility, the longer the audit report lag. Audit quality also reduces the effect of earnings volatility on audit report lag. That is, the higher the quality of the audit, the less the effect of earnings volatility on the delay of the audit report.

**Keywords:** Audit Quality, Earnings volatility, Audit Report Lag

## 1. Introduction

Explaining the financial status and operation of the business unit to external users is the main purpose of accounting to assist them in financial and investment decisions. An important tool for transferring data to these people is financial

reporting. In fact, financial statements are the main source of information for economic decisions that bosses, financiers, creditors and other users use to meet their information needs. (Brian & Mason, 2020).

The collapse of Enron in 2001 led to widespread distrust of the quality of financial reporting of listed companies. And after that, the principles accepted by American accounting and independent auditors were severely criticized. However, auditing by independent professional auditors plays a major role in increasing the reliability of financial statements. But the quality of audit services provided by auditors is heterogeneous. Although different researchers have offered different definitions of audit quality, DeAngelo's (1981) well-known definition is the auditor's ability to detect and report material misstatements in the client's financial statements. Thus, the definition refers both to the auditor's knowledge, experience, and effort to detect material misstatements in the client's financial statements, and to the auditor's independence that leads to the reporting of material misstatements.

Therefore, the audit effort or time spent by the auditor to examine one of the factors that helps to identify the auditors. In fact, reducing the audit effort will be able to greatly increase the risk of non-disclosure of the audit (Sharma, Tanyi, & Litt, 2017). Therefore, less time for the auditor to perform the audit process, this can reduce the delay in submission the report should be audited. However, reducing delays in the audit report may not necessarily be a sign of declining audit quality. If the reduction in the delay in the audit report is due to a reduction in the audit effort, it will be able to reduce the quality of the audit. Reducing audit efforts can be done in a variety of ways: stopping

audit work before it is completed, using inadequate audit techniques, accepting dubious and invalid audit evidence, and reducing the number of audit samples. However, if the reduction in audit report lag is due to an increase in auditors' performance or a decrease in auditors' workload, it may not affect audit quality (Brian & Mason, 2020).

Delays in audit reports are also reduced in Iran. BaniMahd et al. (2014) during a study, the financial reports of 243 organizations listed on the Tehran Stock Exchange in the period 2002 to 2010 were studied. The descriptive statistics of this study show that the delay in the audit report is greatly reduced. On the surface, it can be argued that reducing delays in auditing reports is beneficial, but that the quality of accounting is maintained.

In Iran, competition in the auditing market is increasing sharply after the privatization of auditing, which is due to the establishment of private auditing firms (Mohammad Rezaei, 2017). Increasing the number of auditing firms reduces the workload of auditing firms. On the other hand, this increase in competition has forced auditing firms to work at low cost to obtain audit work. Reducing audit costs can reduce audit efforts.

On the other hand, organizational risk management theory holds that if an organization maintains a steady earnings flow, shareholders will be satisfied. Empirically, earnings volatility are costly. According to risk management theory, there is strong evidence that earnings volatility are negatively correlated with firm value variables. Analysts and investors, bosses have a clear focus on earnings rather than cash flows. There are many reasons why earnings volatility are important for the independence of an organization's cash flow volatility. For example, previous empirical research has shown that analysts tend to avoid covering organizations with variable earnings, as this increases the likelihood of predicted errors. (Brian & Mason, 2020).

Institutional investors avoid organizations that experience large changes in their earnings. High volatility in earnings also increase the likelihood of negative earnings, and in response, bosses have intervened in smoothing and auditing. Earnings smoothing reduces the likelihood that an organization will not be able to pay its borrowing costs and thus reduce borrowing costs. Gul et al. (2007) believe that an organization may reduce its

earnings to reduce the information earnings of informed investors over uninformed investors, thus eliminating investors who may need to trade for liquidity reasons. , Does not delete. Finally, Francis et al. (2013) found that organizations with higher earnings smoothing have lower capital costs even after calculating cash flow volatility.

Earnings volatility, which is one of the characteristics of earnings quality time series, are caused by several factors. More volatility increase the risk. There are two main reasons for earnings volatility: economic factors and how organizations operate in the economic environment in which they operate. Economic shocks that are beyond the control of organizations include exchange rate volatility, changes due to revaluation of assets and changes due to the rate of bank facilities that affect the performance of the business unit (Mashayekh, 2015).

It should be noted that according to the theoretical foundations, the quality of the audit has a negative effect on the amount of earnings volatility and has a negative effect on the audit report lag (Choi et al., 2010). Therefore, according to what was mentioned, the researcher seeks to answer the question that what effect does the quality of the audit have on the severity of the effect of earnings volatility and the audit report lag?

Audited financial statements are considered a reliable source of data for users. But this data can be used when users have a set of qualitative characteristics. One of these features is that there is no delay in the data and it is timely. Timeliness of information is considered as a very important criterion by professional officials, legislators, financial information analysts, investors, heads and the scientific community (Al-Ajmi, 2009). In order to ensure the provision of current and relevant information, information Funding should be collected, summarized and published as soon as possible without interruption. In the decision-making process, old data will not be of much value to decision-makers and market participants. Therefore, the nature of timely information has become one of the important quality criteria in providing accounting information. On the other hand, since the stock market is one of the main pillars of institutions and financial markets, the need for more accurate and reliable forecasting of corporate earnings with less fluctuation is felt more

and more day by day. Earnings volatility, which is one of the characteristics of earnings quality time series, are caused by several factors. More volatility lead to more risk (Sadeghi Hassanabadi, 2019).

Therefore, the current study is conducted with two objectives. First, despite the fact that the reduction of audit report lags in the Iranian audit market is occurring significantly, but the effects of this issue on audit quality have not been considered by Iranian researchers (Hasas Yeganeh & Jafari, 2010). The importance of this issue is doubled when it seems very difficult to interpret the effect of reducing the delay in the audit report on the quality of the audit in the Iranian audit market environment because this issue can be based on two opposing views (reducing the volume and reducing the audit effort) (Mahdavi & Hosseini Nia, 2015). Therefore, due to the lack of necessary empirical evidence about the delay in the audit report in Iran, examining the role of delay in the audit report on the quality of the audit in the audit environment is an important research topic. The second reason is that despite the economic consequences and the impact of earnings volatility and its examples on organizations and the country's economy, in the capital market and research authorities; less attention has been paid. Given the above, it seems that more research is needed to restore investor confidence in capital markets.

## **2. Theoretical background and Hypotheses Formulation**

### ***2.1 Earnings Volatility and Audit report lags***

Audit reports that are too long may indicate a problem, as they may cause sudden losses. If other former investors leave the market optimistically, the first group of investors may become marginal buyers. Often, abnormal delays may be the result of lengthy negotiations. It shows that managers are often incentives to hide bad news by manipulating reported reports, and this can later increase the risk of stock prices falling (Hutton et al., 2009).

Timely disclosure of financial statements undermines investor heterogeneity and consequently falling prices. The existence of major weaknesses in the internal controls of the financial reporting system increases the delay of the audit report. Effective internal controls improve the quality of financial reporting. Earnings volatility are caused by economic factors such as economic doubts or accounting factors such as accounting

earnings determination problems. Organizations operate in an economic environment. Thus, economic shocks that are beyond the control of organizations. Affects the performance of the business unit. Accounting factors are controlled by companies that mainly pay attention to the method of identifying income and expenses and thus the earnings of the economic unit. Capitalists believe that fixed earnings guarantee higher dividends than volatile earnings. In addition, earnings volatility are an important criterion for the overall risk of the company, and companies with softer earnings have less risk. Therefore, organizations with softer earnings are more interested in investors and think they are a better place to invest. Earnings volatility reduces the predictability of future earnings. In addition, earnings is of great importance as the main variable of the organization's stock estimation models. Investors generally pay special attention to earnings figures. They consider non-volatile or low-volatile earnings to be of higher quality. In other words, they want to invest in companies whose earnings margins are more stable. Earnings volatility in consecutive periods have a negative effect on stock prices and reduce investors' confidence in the future of the organization (Heydarian & Faridi Mehr, 2020).

Brian and Mason (2020) in a study entitled "Earnings volatility and Audit report lags" examined the effect of earnings volatility on audit report lags in the US stock market during the years 2004-2015. The findings of this study showed that the relationship between earnings volatility and audit report lag is performed by non-expert auditors, auditors with short tenure and small and medium audit offices. Sadeghi Hassanabadi (2019) in a study entitled "Factors affecting the time of the audit report" Factors affecting the time of the audit report and variables such as the type of audit report, the existence of potential debt, the possibility of probability, the presence of a major shareholder and the history of cooperation between the auditor and The customer paid on the Tehran Stock Exchange during the years 2013-2018. The result of this study showed that the type of audit report, in all the years under review, has a significant impact on the date of the auditor's report. The major variable of shareholders and the variables of changes in contingent liabilities and changes in the auditor had a significant impact on the date of the audit report

during the year and one year of the period under review, respectively. Unexpected items did not show a significant relationship with the date of the audit report. According to the issues raised, the first research hypothesis is presented as follows:

*H1: Earnings volatility have a positive effect on audit report lag.*

## **2.2 Audit quality, audit volatility and audit report lags**

One of the criteria for earnings quality, which is based on the characteristics of earnings time series, is earnings volatility. This index of earnings quality is a measure of earnings stability and durability. Lasting and stable earnings are desirable from the perspective of investors because of their continuity. Earnings volatility measures the amount of time deviations of earnings. As a general rule, volatile earnings are associated with higher risk. Many investors prefer to invest in companies that have a steady earnings ability trend. Investors believe that companies that report volatile earnings are more risk-averse than companies that report flat returns. According to a survey of 401 CFOs conducted by Graham et al. (2005), 97% of respondents had a smooth, low-volatility dividend and were not interested in volatile earnings because 80% believed that earnings volatility were predictable. Reduces future earnings. Research by Mehrani and Hesarzadeh (2011) and Haghghat and Motamed (2011) which based on the research framework of Dichev and Tang (2009) examined the relationship between earnings volatility and its predictability, expressing a negative and significant relationship between Earnings volatility and earnings ability (in the short and long term).

However, various factors may affect earnings volatility. But there are two main reasons for earnings volatility based on research. These include economic factors and how accounting works. Economic shocks and the like, which are beyond the control of companies. Affects the performance of the business unit. Accounting factors that are mainly related to the method of recognizing income and expenses and consequently the earnings of the economic unit. Can affect this mechanism. Factors such as the principle of matching expenses with income and problems related to allocating expenses to financial periods, income recognition, accounting conservatism and the like are the most important factors that can be used to calculate earnings and

the relationship between past and future earnings. , Be effective and fluctuate the relationship between them (Mashayekh, 2015).

Recent international financial scandals such as Lehman Brothers, Anglo-Irish Bank, Enron, Worldcom, Telecom, etc., have raised concerns about the quality of earnings. Independent auditing plays an important role in the financial reporting process and its credibility. While the company's management is responsible for preparing the financial statements, the auditor has been blamed for the scandals. For example, in the Enron scandal, in addition to the organization's senior management, the Arthur Anderson Auditing Institute was found guilty of failing to detect fraud. In this regard, there is a consensus that the lack of independence and poor quality of auditing has led to such scandals. Following these events, legislators and developers of accounting and auditing standards have sought mechanisms to improve the independence of auditors and the quality of auditing (Mehrani & Hesarzadeh, 2012).

One of the important characteristics of earnings and quality of correlation and earnings volatility is that it affects the audit risk. These characteristics may create elements of inherent risk for auditors (Brian & Mason, 2020). Because the audit mission is to validate financial reporting and build trust for users of financial statements, earnings volatility make it more difficult for auditors to assess and estimate expectations and therefore audit quality because correlations and earnings volatility are directly related to inherent audit risk. Perhaps this is because auditors are sensitive to opportunistic activities such as earnings management, earnings smoothing, tax avoidance, and so on.

In the general model of audit risk, which consists of inherent risk, control risk and non-disclosure risk, if the auditor assesses intrinsic risk and control risk at a high level, in order to reduce non-disclosure risk and consequently reduce the overall audit risk, volume Content tests as well as the quantity and quality of your handling will increase. In contrast, the audit fee, which is a function of the duration and complexity of the audit, increases. The amount of remuneration paid to the auditor can affect the quality of the audit work. , Shows a positive reaction (Habib, Bhuiyan, Huang, & Miah, 2019).

The type of auditor comments may affect the quality and pricing of audit services. The risk of

earnings volatility increases the likelihood of a change in the type of audit report and the issuance of adjusted reports with clauses. The condition of adjusted reports requires the collection of a large amount of evidence to achieve the desired level of auditor confidence. In addition, circumstances that lead to increased adjustments in audit reports may be a sign of the need to increase the desired level of assurance, which is due to the increased risk of reactions against the auditor (Palmrose, 1988).

Audited financial statements are a reliable source of data for users, but this data can be used by users when they have relevant quality characteristics such as timeliness. Financial information is very sensitive to the passage of time and over time loses its value in decisions. According to Iranian accounting standards, if the financial statements are not submitted within a reasonable period of time after the balance sheet date, its usefulness will decrease. The timeliness of the auditor's report also affects the reliability of the accounting information. As a result, the shorter the time interval between the end of the financial year and the date of publication of the audit report, the greater the value of the information. Therefore, it is important to understand the factors influencing the delay in the audit report. Because, the timeliness of financial statements as one of the most important qualitative features of financial statements has a direct impact (Caramanis & Lennox, 2008).

Lack of timeliness can reduce the relevance and usefulness of financial information (Financial Accounting Standards Board, 1980). In addition, the timeliness of organizations' financial reports is an essential element for good capital market performance (Capitalists rely on timely data provided by accountants. Financial reporting provides data to decision makers in a timely manner before it loses its capacity to influence business decisions. Wasting time in publishing financial statements leads to uncertainty about investment decisions. Therefore, the longer the delay in issuing financial statements, the greater the uncertainty in decisions based on the information contained in the financial statements (Banimahd, Moradzadehfard, & Zeynali, 2014).

Graham et al. (2005) in a study entitled "Economic Consequences of Companies Using Audit Quality and Earnings volatility" examined the economic consequences of companies using audit quality and

corporate earnings volatility on 401 financial managers. Findings of this study showed that 97% of respondents were in favor of smooth and low volatile earnings and were not interested in volatile earnings because 80% of them believed that earnings volatility reduce the predictability of future earnings. Abbaszadeh et al. (2016) in a study entitled "Study of the relationship between earnings volatility and audit quality in organizations approved in the Tehran Stock Exchange" to investigate the relationship between earnings volatility and audit quality of organizations in the years 2013 to 2016 traded on the Tehran Stock Exchange they paid. The result of this study showed that between the earnings mark and audit quality (auditor tenure, type of auditor's opinion, number of audit report conditions and also between earnings and audit quality volatility (account tenure, audit firm size and number of bet conditions in audit report There is a significant relationship, but there is no significant relationship between the earnings mark and the size of the audit firm, as well as between volatility in earnings and the type of audit opinion, so the second hypothesis is as follows:

*H2: Audit quality reduces the effect of earnings volatility on audit report lag.*

### **3. Research Methods**

This research is the purpose of basic empirical research, because it has been done through the financial data of organizations' past and also in nature, it can be considered a descriptive-correlational research. This research includes the statistical population of all companies approved on the Tehran Stock Exchange during the period 2019-2013. The sampling method in this study is systematic. Organizations are selected as an example that have the following criteria: It is necessary to explain that to calculate the earnings volatility variable, data from before 2013 were also used:

The financial year of these organizations must end at the end of March; during this research, the financial year of these organizations has not changed; Organizations that have an intermediary role should not be other than these companies; all information required in this research should be available in these organizations. Considering the above conditions and restrictions, a total of 132 organizations were selected from the listed organizations, which can be seen in Table (1).

Table 1 the sample size

Description	Number
All organizations approved in the stock exchange until the end of 1398	326
Organizations whose fiscal year does not end at the end of March	28
Has not changed its fiscal year during the research period.	61
Not be part of financial intermediation organizations such as banks, investment and leasing.	83
Not all research information required for the surveyed organizations was available.	22
the sample size	132

In this research, the library method will be used to collect the theoretical foundations and literature of the research subject. Thus, by studying the relevant books and publications and referring to specialized sites, the necessary data is collected. Therefore, the document extraction method is used to collect the required data. The required data and financial information are collected and reviewed from the financial statements of the organizations, the stock exchange website, the stock exchange website, Development and Islamic Studies of the Exchange Organization and databases such as Rahvard Novin. To explain research hypotheses, information about research variables must first be provided, then hypotheses can be formulated based on the material presented. The variables of this research include dependent, independent and control variables which will be explained below.

### 3.1 Dependent variable

*Delay in the audit report:* In this study, the delay in the audit report is the time interval between the date of signing the audit report and the end date of the financial period (Brian & Mason, 2020).

### 3.2 Independent variable

*Earnings volatility:* Earnings volatility is measured by the standard deviation of earnings before probability. In the present study, the standard deviation of the last 5 years of operating earnings and loss is used to measure earnings volatility. The higher the standard deviation of earnings, the poorer the quality of earnings.

### 3.3 Modifier variable

*Audit quality:* If the auditor of the company of the auditing organization or auditing firms has a rank of A with the Tehran Stock Exchange Organization, it will be number one, otherwise it will be zero.

### 3.4 Control variable

*BTM:* The ratio of book value to market value of equity

*CURRENT:* Current assets divided by current liabilities

*EPS\_UP:* is a fictitious variable; If the earnings per share is greater than last year, it gets code one, otherwise it gets code zero.

*FINANCE:* is a fictitious variable; If the company's long-term debts are at least 20% more than last year or the number of issued shares is at least 10% more than last year, it gets code one, otherwise it gets code zero.

*LEV:* The ratio of total liabilities to total assets

*LNAF:* Natural Audit Fee Logarithm

*LNAT:* The natural logarithm of all assets

*OPINION:* is a fictitious variable; If the company's auditor has submitted an adjusted report, he will receive code one, and if not, he will receive code zero.

*RESTATE:* is a fictitious variable; If the financial statements of the company are presented, the renewal will receive code one, and if not, it will receive code zero.

In this section, the following models are used to evaluate research hypotheses. To analyze the data and test the first hypothesis, the multivariate regression model and composite data according to Equation (1) are used as follows:

Equation (1):

$$ARLAG_{it} = \alpha + \beta_1 IBVOL_{it} + \beta_2 BTM_{it} + \beta_3 CURRENT_{it} + \beta_4 EPS\_UP_{it} + \beta_5 FINANCE_{it} + \beta_6 LEV_{it} + \beta_7 LNAT_{it} + \beta_8 LNAF_{it} + \beta_9 OPINION_{it} + \beta_{10} RESTATE + \varepsilon_{it}$$

$ARLAG_{it}$  is Delay in Company  $i$ 's audit report in period  $t$ ;  $IBVOL_{it}$  is Volatility of company  $i$  in period  $t$ ;  $BTM_{it}$  is Company  $i$ 's investment opportunity in period  $t$ ;  $CURRENT_{it}$  is has the current company  $i$  in period  $t$ ;  $EPS\_UP_{it}$  is Earnings per share of company  $i$  in period  $t$ ;  $FINANCE_{it}$  is Financial debt of company  $i$  in period  $t$ ;  $LEV_{it}$  is The financial leverage of company  $i$  in period  $t$ ;  $LNAT_{it}$  is Natural assets of Company  $i$  in period  $t$ ;  $LNAF_{it}$  is Company's auditing fee for period  $t$ ;  $OPINION_{it}$  is Comment of company  $i$  in period  $t$ ;

RESTATE<sub>it</sub> is Company i re-comment in period t; and  $\varepsilon_{it}$  is Model error. If  $\beta_1$  is a positive and significant coefficient, the first hypothesis of the research will not be rejected. To analyze the data and test the second hypothesis, the multivariate regression model and composite data according to Equation (2) are used as follows:

Equation (2):

$$ARLAG_{it} = \alpha + \beta_1 IBVOL_{it} + \beta_2 AQ_{it} + \beta_3 IBVOL_{it} * AQ_{it} + \beta_4 BTM_{it} + \beta_5 CURRENT_{it} + \beta_6 EPS\_UP_{it} + \beta_7 FINANCE_{it} + \beta_8 LEV_{it} + \beta_9 LNAT_{it} + \beta_{10} LNAF_{it} + \beta_{12} OPINION_{it} + \beta_{13} RESTATE_{it} + \varepsilon_{it}$$

AQ<sub>it</sub> is Audit quality of company i in period t; IBVOL<sub>it</sub> \* AQ<sub>it</sub> is the interactive effect of audit quality on the volatility of company i in period t. If  $\beta_2$  is a negative and significant coefficient, the second hypothesis of the research will not be rejected. It should be mentioned that, the Multivariate linear regression model has been used in this study to test the hypotheses. The statistical method in this research is panel data method. First, the panel data method and related experiments are described. Then the tests related to the importance of the whole model and the importance of independent variables are explained. Finally, after describing the tests related to classical regression hypotheses, the method of deciding whether to reject or accept the research hypotheses is stated. It should be noted that in this study, Eviews and Excel software were used for data analysis. In this study, to test the hypotheses, first using the F test (if the calculated F value is less than 0.05, Hypothesis H1 is confirmed and the importance of the model is confirmed at the 95% confidence level). The model was tested according to the type of method. Multiple linear regression is used when two or more variables have a major effect on the dependent variable.

#### 4. Analysis

Describes the research variables in Table 2, and the variables are described using center-oriented and scattering indices (mean, median, standard deviation) and normal tests such as tilt and elongation. The time period of the obtained information includes 7 years and from 1392 to 1398 and consists of 132 organizations.

Table 2. Descriptive statistics of research variables

Variable	Mean	MD	SD	Min	Max	kurtosis	Skewness
ARLAG	61/61	0/124	12/39	0/041	0/241	-0/008	<b>0/419</b>
IBVOL	0/11	0/489	0/18	0/140	0/740	-0/267	<b>-0/280</b>
AQ	0/272	0/258	0/103	0	1	-1/04	<b>0/038</b>
CURRENT	2/81	16/32	2/33	1/26	24/56	1/56	<b>-0/794</b>
Lev	0/52	0/26	0/26	0/32	3/16	-0/293	<b>0/345</b>
EPS_UP	0/56	0/119	0/5	0	1	4/345	<b>-2/515</b>
BTM	0/47	3/89	0/41	0/35	8/35	-0/99	<b>0/102</b>
FINANCE	0/43	0/313	0/5	0	1	4/02	<b>3/94</b>
LNAT	6/95	0/41	1/68	0/101	0/77	4/938	<b>2/579</b>
LNAF	14/28	19/45	0/96	16/811	21/82	4/321	<b>2/342</b>

variable	Frequency	Percentage of Frequency
OPINION	437	47/3
RESTATE	484	52/7

The results show that the average delay in the audit report is 61.61, earnings fluctuation is 0.11, audit quality is 0.272, current assets are 2.81, financial leverage is 0.52, earnings per share is 0.56, opportunity Investments equals 0.47, financial liabilities equals 0.43, natural assets equals 6.95, and auditing fees equals 14.28. The normality test shows that the skew values of all variables are less than 3 and the elongation values are less than 5, which shows that the research variables have an almost normal distribution. Considering that the variables of the type of auditor's statement and presentation of financial statements are virtual variables (with two values of zero and one) and the disclosure of descriptive statistics is different for it, but the frequency table related to these variables is also presented in the table above. Is. According to the information in this table, out of 924 observations of this research (132 companies for 7

years), 437 years - the company has the auditor's opinion, which is equivalent to 47.3% of the total observations. Also, 484 years-old companies have presented financial statements, which is equivalent to 52.7% of the total observations.

Regardless of the assumptions of the regression model, relying on statistical results is not very valid and cannot be used for decision making. Therefore, before performing any description of regression findings, the model estimation method is examined. In this study, in order to achieve the set goals, it is necessary to estimate the collected data and use a model that expresses these goals and their relationship. And this requires the necessary pre-tests to determine the type of main test, which is followed by these pre-tests and the main test and then the analysis of the results. First, Chow test and F-Limer statistic were used to determine the method of using the combined data and to determine whether it is homogeneous or heterogeneous. Therefore, Hausman test was used to determine the type of hybrid data model. Hausmann test shows that fixed or random effects are used to estimate model parameters. The results are shown in Table 3.

Table 3. F-Limer and Hausmann tests to evaluate the regression model estimation method

Model	Type of test	H0	F-statistic	F Probe	Test result
First	F-Limer	Cross-sectional and temporal effects are not significant	12/45	0/001	<b>Combined data</b>
	Hausman test	Independence of the stochastic effects model	18/39	0/001	<b>Fixed effects</b>
Second	F-Limer	Cross-sectional and temporal effects are not significant	11/73	0/001	<b>Combined data</b>
	Hausman test	Independence of the stochastic effects model	15/61	0/001	<b>Fixed effects</b>

The findings of the Chao experiment show that the probability obtained for the F statistic is less than 5%, so for the model test, the data are analyzed by the combined method. This means that because the probability of F-statistic is less than 5%, hybrid regression models are used instead of hybrid models. The findings of Hausman test show that the probability level is less than 0.05, so the null hypothesis of the research is rejected and the fixed

effects model should be used to estimate the parameters of the research regression equation. The results show that the stochastic effects are inconsistent and the estimation of the fixed effects method should be used to estimate both models in this section.

In the next section, the researcher tested the assumptions of the classical model or linear regression, and examine the main assumptions including error variance instability, misalignment between independent variables, and automatic error correlation. One of the assumptions of the regression equation is that the variance of the error sentences is constant, which is known as the assumption of homogeneity of variance. If the error expressions do not have a fixed variance, it is said that there is a heterogeneous variance. This problem is more common in cross-sectional data. One of the tests for detecting variance is the Pagan Godfrey test, which is about constant or variable sentences. The results of Table 4 are presented.

Table 4. Results of Bruch-Pagan-Godfrey test to check for constant variance of error

Models	F-statistic	The significance level	Result	Estimation method
First	1/71	0/135	Homogeneity of variance	<b>OLS</b>
Second	2/17	0/143	Homogeneity of variance	<b>OLS</b>

Taking into account the values of test statistics and probability values obtained, the assumption that the variance of the error is constant at the 95% confidence level is confirmed. The probability value obtained for the first model is 1.71 and for the second model is 2.17, both of which are greater than 0.05, indicating that the variance of the error is accepted as constant.

Severe mismatch between independent variables is one of the presuppositions of the regression test that has been investigated using tolerance statistics and variance inflation coefficient. If the tolerance value is greater than 0.20 and the variance inflation coefficient is less than 5, it means that there is not much alignment between the independent variables. The linear relation indicates that an independent variable is a linear function of other independent variables. To detect alignment, we can use tolerance statistics or inflation coefficient of variance (VIF). Tolerance ratio is an independent variable that is not explained by other independent variables.



Table 5. Alignment test to check the independence of independent variables

independent variable	VIF-statistic	Tolerance-statistic
IBVOL	2/21	0/454
AQ	2/12	0/468
CURRENT	1/31	0/701
Lev	1/13	0/918
EPS_UP	1/59	0/553
BTM	1/52	0/601
FINANCE	2/3	0/389
LNAT	1/67	0/593
LNAF	1/54	0/627
OPINION	2/05	0/476
RESTATE	1/99	0/493

The dependent variable is the quality of earnings, which in this section evaluates the alignment between the six independent variables. The lowest value of tolerance is equal to 0.389 and the highest value of inflation variance is equal to 2.3. Considering that the tolerance statistic is more than 0.20 and the variance coefficient is less than 5, it can be concluded that there is no strong alignment between the independent variables.

After determining the type of evaluation method (F-Limer test and Hausman test) and examining the model assumptions, the model evaluation was performed. In this part of the research, the variables were estimated based on panel data method or composite data. The results are shown in Tables 6 and 7. Model estimation was performed based on multiple linear regression.

The first hypothesis of the research is that earnings volatility have a positive effect on the delay of the audit report. Table 6 shows the results of multiple linear regression tests for the first model test. To

investigate the effect of earnings volatility on audit report lag, model 3-1 was used in which the dependent variable or audit report lag criterion based on earnings volatility is predicted, which is expected to have a positive effect on audit report lag. The model also includes control variables that include current assets, financial leverage, and earnings per share, investment opportunities, financial liabilities, natural assets, audit costs, statements and revisions. Regression coefficients were estimated based on the partial least squares method.

Table 6 Test results of the first model of research

$$ARLAG_{it} = \alpha + \beta_1 IBVOL_{it} + \beta_2 BTM_{it} + \beta_3 CURRENT_{it} + \beta_4 EPS\_UP_{it} + \beta_5 FINANCE_{it} + \beta_6 LEV_{it} + \beta_7 LNAT_{it} + \beta_8 LNAF_{it} + \beta_9 OPINION_{it} + \beta_{10} RESTATE + \epsilon_{it}$$

Variable	Coefficient	Std. Error	t-Statistic	Prob.
IBVOL	0.362071	0.056306	6.463624	0.0000
CURRENT	-0.00841	0.00127	7.000211	0.0000
LEV	0.00841	0.00252	3.313736	0.0010
EPS_UP	0.115637	0.040625	2.862855	0.0050
BTM	0.063767	0.041222	1.543736	0.1250
FINANCE	0.314637	0.033625	9.262855	0.0000
LNAT	3.040767	0.471222	6.453736	0.0000
LNAF	-0.132625	0.158625	0.842855	0.4010
OPINION	0.469767	0.203222	2.313736	0.2210
RESTATE	0.035637	0.029225	1.212855	0.2270
C	-0.0695	0.20685	-3.529148	0.0000

R-squared=0/761

Adjusted R-squared= 0/758

F-statistic=233/60, P<0/000

Durbin-Watson stat= 1/71

F test was performed to evaluate the fit of the model. This test is significant (p <0.05) and shows that the regression model is appropriate and independent variables have the ability to predict the dependent variable. The value of the adjusted coefficient of determination is 0.758, which is 50% higher than the average, indicating that the model independent variables were able to explain 75.8% of the dependent variable changes, which indicates

that it is appropriate. The explanatory power of the Watson camera test model for the residual independence test was 1.68, indicating that the residual independence hypothesis has been confirmed. The importance of the coefficients showed that the effect of earnings volatility on the delay of the audit report was confirmed. (05/0> p). It has a positive effect which shows that with increasing earnings volatility, the rate of delay in the audit report also increases.

The second research hypothesis is that audit quality reduces the effect of earnings volatility on audit report lag. Table 7 shows the findings of multiple linear regression tests for the second model test. To investigate the role of audit quality in the effect of earnings volatility on audit report lag, model 3-2 was used in which the dependent variable is the criterion for audit report lag and audit quality is expected to reduce the effect of earnings volatility on audit report lag.

Table 7 Test results of the second model of research

$$ARLAG_{it} = \alpha + \beta_1 IBVOL_{it} + \beta_2 AQ_{it} + \beta_3 IBVOL_{it} * AQ_{it} + \beta_4 BTM_{it} + \beta_5 CURRENT_{it} + \beta_6 EPS\_UP_{it} + \beta_7 FINANCE_{it} + \beta_8 LEV_{it} + \beta_9 LNAT_{it} + \beta_{10} LNAF_{it} + \beta_{12} OPINION_{it} + \beta_{13} RESTATE_{it} + \varepsilon_{it}$$

Variable	Coefficient	Std. Error	t-Statistic	Prob.
IBVOL	0.002701	0.000331	8.573736	<b>0.0000</b>
AQ	0.493637	0.883625	0.558855	<b>0.0070</b>
IBVOL *AQ	2.205767	1.665222	1.324736	<b>0.0060</b>
CURRENT	-0.000	0.000665	-0.501855	<b>0.6163</b>
LEV	0.020567	0.017422	1.173736	<b>0.2407</b>
EPS_UP	0.018437	0.002525	7.382855	<b>0.0000</b>
BTM	0.004767	0.246222	0.015731	<b>0.9880</b>
FINANCE	1.417637	1.341625	1.057855	<b>0.2910</b>
LNAT	1.391767	1.154222	1.114736	<b>0.0100</b>
LNAF	0.711331	0.225665	0.039855	<b>0.0000</b>
OPINION	2.057326	1.070232	1.923736	<b>0.0560</b>
RESTATE	0.252410	1.043822	0.242855	<b>0.0590</b>
C	-	0.007685	-9.869148	<b>0.0000</b>

**R-squared=0/721194**

**Adjusted R-squared= 0/688917**

**F-statistic=194/3039, P<0/000**

**Durbin-Watson stat= 1/94**

In order to evaluate the fit of the model, F test was performed. This test is significant (p <0.05) and it is found that the regression model is appropriate and independent variables have the ability to predict the dependent variable. The value of the adjusted

coefficient of determination is equal to 0.68, which is higher than the average of 50% and shows that the model independent variables were able to explain 68% of the dependent variable changes, which shows the explanatory power of the Watson camera test model for independence. Residues,

equivalent to 1.94, were performed, indicating that the residual independence hypothesis was confirmed. The importance of coefficients showed that audit quality reduces the effect of earnings volatility on audit report lag ( $p < 0.05$ ).

In this section, according to the direction of research hypotheses, the final result of the study of hypotheses is given. Confirmation or rejection at the same time of the two factors is the level of importance and direction of the relationship. This research has two hypotheses that the hypotheses are reported along with the result in Table 8.

Table 8. the final result of the research hypotheses test

	Hypotheses	Result
First	Earnings volatility have a positive effect on audit report lag	not rejected
Second	Audit quality reduces the effect of earnings volatility on audit report lag	not rejected

The results show that the effect of earnings volatility on the delay of the audit report is confirmed ( $p < 0.05$ ). The probability level obtained is less than 0.001, which indicates the confirmation of the relationship at the confidence level of more than 99%. This has a positive effect, indicating that increased earnings volatility increases audit report lag. The test results of the second hypothesis showed that the quality of the audit reduces the effect of earnings volatility on the delay of the audit report ( $p < 0.05$ ). The probability level obtained is less than 0.001, which indicates that the relationship has been confirmed at the confidence level above 99. The positive effect shows that increasing the quality of the audit reduces the effect of earnings volatility on the delay of the audit report.

## 5. Conclusion

According to the theoretical foundations, in the first hypothesis of the research, the effect of earnings volatility on the delay of the audit report is expected to be positive. In order to test this hypothesis, regression model (1) was used. The results of this test in Table (6) show that the variable of earnings volatility has a positive and significant effect on the delay of the audit report. This means that the higher the earnings volatility, the longer the audit report lag. With a 95% probability this hypothesis is not rejected.

Audit reports that are too long may indicate a problem, as they may cause sudden losses. If other

former investors leave the market optimistically, the first group of investors may become marginal buyers. Often abnormal delays may indicate the existence of lengthy auditor-client negotiations due to earnings quality. Managers are often encouraged to conceal bad news by manipulating reported reports, which can later increase the risk of stock prices falling. (Hutton et al., 2009). Timely disclosure of audit financial statements reduces investor confidence heterogeneity and consequently price falls. The existence of major weaknesses in the internal controls of the financial reporting system increases the delay in the audit report. Effective internal controls improve the quality of financial reporting. Earnings volatility are caused by economic factors such as economic doubts or accounting factors such as accounting earnings determination problems. Organizations operate in an economic environment. Thus, economic shocks that are beyond the control of companies. Affects the performance of the business unit. Accounting factors are controlled by companies that mainly pay attention to the method of identifying income and expenses and thus the earnings of the economic unit. Capitalists believe that fixed earnings guarantee higher dividends than volatile earnings. In addition, earnings volatility are an important criterion for the overall risk of the company, and companies with softer earnings have less risk. Therefore, companies with softer earnings are more interested in investors and are a better place to invest. Earnings volatility reduce the predictability of future earnings, in addition, earnings are very important as the main variable of the company's stock valuation models. Investors generally pay special attention to income. They consider volatility without volatility or low volatility to be of better quality. In other words, they want to invest in companies whose earnings margins are more stable. Therefore, in order to reach more investors, earnings volatility are accompanied by delays in the audit report. The test results of this hypothesis are consistent with the results of Brian and Mason (2020).

In the second hypothesis of the research, according to the theoretical foundations, the quality of the audit is expected to reduce the effect of earnings volatility on the delay of the audit report. Regression model (2) was used to test this hypothesis. Table (7) shows the results of this test

that the audit quality variable reduces the effect of earnings volatility on the delay of the audit report. That is, as the quality of the audit improves, the effect of earnings volatility on the delay of the audit report decreases. This hypothesis will not be rejected with 95% probability. Given the fundamental role of earnings in users' decisions, a significant portion of the audit budget's time budget is devoted to the collection and evaluation of evidence of earnings and its constituent elements, so earnings and its characteristics can affect the audit process and quality. It is effective. Among the criteria related to earnings quality, earnings volatility is one of the important features related to earnings time series that measures the amount of time deviations of earnings. The higher the volatility of earnings, the lower the stability of earnings and, consequently, the lower the quality of earnings. Since volatile earnings are usually associated with higher risk, earnings volatility is expected to affect the overall audit risk as well as the quality of the audit (Lin and Leo, 2009). The results of this hypothesis with the findings of Abbaszadeh et al. (1399). ) Is compatible. Now, according to the results obtained in this research, suggestions based on research findings as well as suggestions for future research are presented.

The test results of the first hypothesis showed that earnings volatility have a positive and significant effect on the delay of the audit report, so it is suggested that capital owners pay special attention to the amount of earnings volatility of organizations to make investment decisions. The findings of the second hypothesis test showed that the quality of the audit reduces the effect of earnings volatility on the delay of the audit report, so since the quality of the audit is one of the pillars of transparency, investors are advised to buy quality when buying stocks. Examine the audit of the company in question.

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