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Determinants of audit report lag: evidence from Indonesia's basic materials sector (2019-2022)

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ABSTRACT

Companies registered on the Indonesia Stock Exchange (IDX) must present financial reports in accordance with accounting standards and be audited by an independent auditor in a timely manner. This study examines the influence of leverage, financial distress, tax risk, and earnings volatility on audit report lag in the basic materials sector companies listed on the IDX for 2019-2022. Using purposive sampling techniques, the study obtained 19 samples from an initial population of 26 companies after eliminating outliers and analyzed the data using panel data regression through Eviews 12 software. The results show that leverage and financial distress have no significant effect on ARL, indicating that these factors do not directly affect the time taken to complete the audit process for companies in the basic materials sector. However, earnings volatility is shown to have a significant negative effect on ARL, indicating that companies with greater earnings fluctuations tend to take longer to complete the audit of their financial statements. This study contributes to the understanding of the factors that influence ARL in the basic materials sector in Indonesia and can serve as a basis for further research on the influence of external and internal factors on corporate financial reporting transparency.



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Introduction

Audit Report Lag (ARL) is an important indicator in assessing corporate transparency and accountability, especially for stakeholders who rely on financial reports as a basis for decision making (Chalu, 2021; Rahaman & Bhuiyan, 2024). A shorter ARL reflects efficiency in the audit process, which can increase investor confidence in the management of the company (Abouelela et al., 2025). This is particularly relevant for the basic materials sector, which is known for its complex operational characteristics, such as dependence on natural resources, commodity price fluctuations, and long supply chains. These complexities often prolong the audit process, making ARL management crucial in maintaining the credibility of financial statements (Wulandari & Barokah, 2023).

On the Indonesia Stock Exchange (IDX), the basic materials sector shows a relatively longer ARL trend compared to international standards (BEI, 2023). This can be a challenge in attracting global investors who prioritise timeliness and quality of information. International standards, such as those set by the International Financial Reporting Standards (IFRS), encourage companies to provide faster financial reports to improve competitiveness in the global market. Therefore, analysing ARL in the basic materials sector in Indonesia is

relevant to evaluate the extent to which companies are able to fulfil transparency demands in an increasingly globally integrated business landscape.

According to PSAK No. 1 (2021: 1.4), companies must use specific standards in the recording and assignment of comprehensive financial reports, which include statements of financial position, changes in equity, profit/loss and other comprehensive income, cash flows, and notes to the financial statements (CALK). Audited financial reports are very important in terms of making business decisions so they must be free from material misstatements and must be submitted on time (Imanniar & Majidah (2020). Corporation registered on the Indonesia Stock Exchange (IDX) must present financial statements checked by an independent auditor in accordance with OJK regulations. During the 2019-2022 period, two different OJK regulations applied: POJK No. 29/PJOK.04/2016 for 2019-2021 and POJK No. 14/POJK.04/2022 for 2022, with deadlines for presenting financial statements at the end of April and the end of March, respectively. Delays in reporting, can reduce the reliability and quality of data in financial statements and result in administrative sanctions by OJK. Despite the sanctions, some companies still experience delays, such as PT Krakatau Steel (Persero) Tbk (KRAS), which was threatened with suspension if it did not submit its 2022 financial statements on time, and PT HK Metals Utama Tbk. (HKMU), which risked delisting from the stock exchange due to suspension related to its audited financial statements as of December 31, 2022.

Various factors are believed to influence the length of ARL, such as leverage, financial distress, tax risk, and earnings volatility. High leverage may reflect financial risks that require a more in-depth audit, while financial distress often complicates the audit process due to high uncertainty (Fitriadi et al., 2025). Tax risks related to tax policies can also extend audit time, especially if the company faces tax audits (Belnap et al., 2024). In addition, high earnings volatility tends to increase the complexity of financial statements, thus extending ARL (Duah, 2022). All these factors not only impact ARL, but also the perceived quality of the financial information produced. The 2019-2022 period was chosen because it encompasses significant economic dynamics, such as the impact of the COVID-19 pandemic, economic recovery efforts, and regulatory changes that affect the business environment in Indonesia. The COVID-19 pandemic put enormous pressure on company operations and audit processes, while the economic recovery in the following years created new challenges, including adaptation to new regulations.

Audit Report Lag (ARL) in the basic materials sector in Indonesia still shows imperfections, especially compared to international best practices. This reflects the challenges in achieving the transparency and accountability expected by stakeholders, including investors. One of the main causes is the lack of in-depth understanding of the influence of internal company factors on the length of ARL (Bajary et al., 2023). The basic materials sector has unique characteristics such as dependence on natural resources, commodity price fluctuations, and complex operations, which can prolong the audit process (Karaosman et al., 2020). This condition is exacerbated by sub-optimal risk management and financial reporting strategies, which contribute to increased audit duration (Kügerl et al., 2023).

Understanding the influence of internal factors such as leverage, financial distress, tax risk, and earnings volatility is crucial in overcoming the problem of suboptimal ARL. High leverage often increases audit complexity due to significant financial liabilities (Chen et al., 2022). Financial distress complicates the audit with high uncertainty risk (Wicaksono et al., 2023). Tax risks associated with managing tax liabilities can also slow down the audit process if the company faces a tax audit (Belnap et al., 2024). On the other hand, high earnings volatility requires more in-depth analysis by auditors to ensure the accuracy of financial statements (Uzma, 2023). By identifying and understanding the influence of these factors, companies in the basic materials sector can adopt strategic measures to manage ARL more effectively and improve the quality of financial information submitted.

Theoretically, the four variables, namely leverage, financial distress, tax risk, and earnings volatility, can affect the length of Audit Report Lag (ARL) because each variable reflects the level of risk and complexity faced by auditors in the audit process. Based on Agency Theory, high leverage increases the financial risk that must be thoroughly audited to ensure the company's feasibility in fulfilling its debt obligations. This requires auditors to perform additional procedures to evaluate potential violations of debt contracts or covenants, which can extend ARL (Hutagalung et al., 2024). Financial distress, in accordance with Signalling Theory, reflects financial instability that indicates greater risk for the company. Auditors need to conduct more detailed testing to ensure that the financial statements reflect the actual conditions, thus affecting the duration of the audit (Habib et al., 2020).

Meanwhile, tax risk may affect ARL through its interaction with Tax Avoidance Theory, which states that the complexity of tax management and potential tax disputes increase the auditor's workload in verifying transactions related to tax liabilities (Alm, 2023). Earnings volatility, within the framework of Resource-Based

View Theory, describes earnings uncertainty that requires in-depth analysis to ensure the stability and quality of financial statements. High uncertainty can complicate the audit process because auditors must verify earnings fluctuations and evaluate their impact on the financial statements (Al-Aloula, 2022). Taken together, these theories help explain how the four variables affect the length of the ARL, highlighting the need for an in-depth understanding of the interaction between firm risk and the audit process. Various studies have examined variables such as leverage, financial distress, tax risk, and earnings volatility in relation to Audit Report Lag (ARL). Research by Fujianti & Satria (2020) shows that leverage has not empirically proven to have a significant effect on ARL. Meanwhile, Gonidakis et al., (2020) found that financial distress increases information uncertainty, thus requiring more in-depth audit procedures. In the context of tax risk, research by Suwardi & Saragih (2023) revealed that tax risk has no effect on ARL. In addition, a study by Miah et al., (2023) shows that high earnings volatility increases the level of complexity in verifying the accuracy of financial statements, which in turn has an impact on audit duration.

Although Audit Report Lag (ARL) has been a widely discussed topic in finance and accounting research, studies that specifically analyse the effect of a combination of leverage, financial distress, tax risk, and earnings volatility variables on ARL are still limited, especially in the basic materials sector in Indonesia. This sector has complex operational characteristics and is significant in the national economy. Most of the previous studies only focus on one of the factors or do not holistically explore the interaction between these variables in influencing ARL. This study aims to fill the gap by exploring the combined influence of internal company factors on ARL, providing deeper insights into the dynamics of financial reporting in the basic materials sector. The contribution of this research is expected to not only enrich the finance and accounting literature, but also serve as a practical guide for company management, auditors, and regulators in improving the efficiency of the audit process and the transparency of financial information.

This study aims to analyse the effect of leverage, financial distress, tax risk, and earnings volatility on Audit Report Lag (ARL) in basic material sector companies listed on the Indonesia Stock Exchange (IDX) during the 2019-2022 period. Specifically, this study aims to identify the extent to which each of these variables, both individually and together, contributes to the duration of the audit process. In addition, this study also aims to provide empirical insights into the internal corporate factors that influence financial reporting efficiency in the basic materials sector, which has complex operational characteristics and is susceptible to economic dynamics. By understanding these relationships, this study is expected to make theoretical contributions to the finance and accounting literature and provide practical recommendations for companies, auditors, and regulators to improve the efficiency of the audit process and the quality of financial information.

Literature Review

A leverage is a proxy that computes the potency to borrow capital or debt to finance assets or other equipment. High leverage ratio makes investors reluctant to invest their capital and makes it difficult for creditors to provide loans because of the high risk the firm has. If a company's leverage scale increases, there is a risk of declining profits. Auditors become more cautious about gaining complete confidence in their audit opinion, resulting in a longer ARL. This situation aligns with the findings of Nouraldeen et al., (2021) and Bawono et al., (2023), who explain that leverage has a positive correlation with ARL.

H₁: Leverage partially has a positive effect on audit report lag

The next element that refers to ARL is financial distress. Financial distress refers to a company's financial status coming down before it goes out of business (Farida & Sugesti, 2023). According to Kristanti & Pancawitri (2024) If a company is required to pay off payments when they are due, then the company will pay off its obligations at once in large amounts and send a warning to stakeholders regarding the company's potential. When a company faces increased financial difficulties, auditors will intensify their efforts and strengthen audit procedures, extending the audit report lag (Park & Choi, 2023). Studies by Park & Choi (2023) and Gustiana & Rini (2022) found that financial distress positively correlates with ARL.

H₂: Financial distress partially has a positive effect on audit report lag

Another factor affecting ARL is tax risk. The high taxes paid by companies are caused by the high profits earned by companies (Nirmanggi & Muslih, 2020). Potential tax risk can lead to longer ARL (Abernathy et al., 2021). Auditors need additional effort and time to confirm and resolve tax-related issues and the company's tax risk estimates, increasing the likelihood of audit report lag in corporate with high tax risk compared to those with low tax risk (Suwardi & Saragih, 2023). Abernathy et al., (2021) detected that tax risk positively affects ARL.

H₃: Tax Risk partially has a positive effect on audit report lag

The last element influencing ARL is earnings volatility. Higher or lower levels of earnings volatility are perceived by auditors as an increased risk, prompting auditors to adjust their efforts accordingly, which may be

reflected in the ARL (Bryan & Mason, 2020). Lestari et al., (2022) found that earnings volatility positively correlates with ARL.

H₄: Earnings volatility partially has a positive effect on audit report lag

Method

Type of Research

This study uses a quantitative method with an explanatory research approach to explain the causal relationship between leverage, financial distress, tax risk, and earnings volatility on Audit Report Lag (ARL). The data used in this study are secondary data obtained from the annual financial statements of basic material sector companies listed on the Indonesia Stock Exchange (IDX) during the 2019-2022 period. The explanatory approach is used because this research focuses on analyzing the influence and relationship between variables to provide a deeper understanding of the factors that influence ARL.

Operational Variables

The research variables consist of dependent and independent variables. The dependent variable in this research is audit report lag (ARL) and the independent variables consist of four, namely leverage (X1), financial distress (X2), tax risk (X3), and earnings volatility (X4).

Audit Report Lag (ARL)

Suwardi & Saragih (2023) state that the distance during the end date of the company's annual period and the date it was signed by the auditor is the definition of audit report lag. The audit process can affect the timeliness of reporting. Audited financial reports must be free from material misstatements and be submitted on time, therefore the audit process can affect the timeliness of submitting financial reports (Imanniar, 2020). The longer audit report lag period, the relevance and quality of the report data contained in the financial reports will become a question. As for measuring audit report lag, it can be assessed using the formula (Suwardi & Saragih, 2023):

$$\text{ARL} = \text{Date of audited report} - \text{Date of financial statements}$$

This formula is used to calculate the duration of time required by the auditor to complete the audit process and issue an official audit report. This formula is very relevant in this study because ARL can be an indicator of the efficiency and timeliness of the audit process which affects the quality of financial information submitted to stakeholders, including investors and regulators. In the context of companies listed on the Indonesia Stock Exchange (IDX), the timeliness of audit reporting is crucial to ensure transparency and accountability, which in turn can increase market confidence in the company.

Leverage

Leverage is a measuring tool for evaluating a company's capability to pay debt, where the relationship between total equity is directly proportional to the company's ability to pay off its debt. The skyrocketing debt scale can illustrate the company's situation which is considered vulnerable and threatened so that the auditor adds precautions in auditing which has the impact of extending the duration of the audit report lag. During implementation, leverage can be tested in several ways. However, in the process the researcher chose the Debt-to-Equity Ratio (DER) to test the level of debt in the corporation. Debt to Equity Ratio (DER) is formulated in the equation below (Pratiwi, 2022):

$$\text{DER} = \frac{\text{Total Utang (Debt)}}{\text{Ekuitas (Equity)}}$$

Debt-to-Equity Ratio (DER) was chosen because this formula is a common indicator used to measure the extent to which a company uses debt in its funding structure. DER provides a clear picture of the proportion of debt to equity, which can be used to assess the company's financial risk. A high ratio indicates that the company is highly dependent on external funding, which may affect the auditor's decision-making in assessing the sustainability of the company.

Financial Distress

Financial distress is a condition that proves that a corporation experienced a decline in its financial condition before finally going bankrupt (Farida & Sugesti, 2023). In this test, the author applies the Altman z-score model because according to Wahyuni & Rubiyah (2021) the level of accuracy of the Altman method is higher when compared to all other methods. The Altman method itself has developed its method 3 times with modifications, where the third modification is called the Altman z-score modification 1995 which is suitable for use in various categories of fields whether they are public or not. Altman Z-Score is a comprehensive indicator to measure the level of corporate bankruptcy risk. Companies with low scores tend to require a more in-depth audit due to the potential for material misstatement. The modified Altman z-score formula is as follows:

$$Z = 6,56X_1 + 3,26X_2 + 6,72X_3 + 1,05X_4$$

Description:

- Z = Z-Score Indeks
 X_1 = Working Capital / Assets
 X_2 = Retained Earnings / Assets
 X_3 = EBIT / Total Assets
 X_4 = Book Value of Equity / Debt

Tax Risk

Suwardi & Saragih (2023) claim tax risk as the potential that tax results diverse from those expected for various reasons. According to Abernathy et al. (2021) tax risk measurement is still uncertain, but their research results provide external validity for using CETR volatility as a formula for tax risk. The following is the CETR volatility formula (Abernathy et al., 2021):

$$S = \sqrt{\frac{\sum_i^t (\text{CETR}_i - \overline{\text{CETR}})^2}{n-1}}$$

Description:

- S = Standard Deviation
 CETR = Cash Tax Paid / Pretax Income
 CETR_i = Cash ETR in year-i
 $\overline{\text{CETR}}$ = Avarage Cash ETR
 n = Total Sampel

This formula is used because CETR volatility reflects instability in corporate tax liabilities over time. This uncertainty is important to measure because it can provide insight into the aggressiveness or conservatism of a company's tax strategy. In an audit context, high tax risk can prolong the audit process as auditors must verify potential violations or aggressive tax interpretations. This is particularly relevant in the basic materials sector, which often faces tax complexities related to international operations or fluctuating raw material prices.

Earnings Volatility

According to Lestari et al., (2022) earnings volatility represents the degree of deviation in profits from time to time. This variable is calculated using the standard deviation of the ratio of earnings before extraordinary items to total assets at the beginning of the year. Earnings volatility reflects the financial stability of the company, where a high level of fluctuation indicates instability that may affect the auditor's perception of risk. In accordance with Bryan & Mason (2020), the formula equation is as follows:

$$S = \sqrt{\frac{\sum_i^t (\text{EVOL}_i - \overline{\text{EVOL}})^2}{n-1}}$$

Description:

- S = Standard Deviation
 EVOL = Income before extraordinary item / Asset the beginning of the year
 EVOL_i = Earnings Volatility in year-i
 $\overline{\text{EVOL}}$ = Rata-Rata Earnings Volatility
 n = Total Sampel

This formula is used because it reflects the variation or deviation of earnings from their average, which is relevant for measuring the risk of a company's financial fluctuations. High earnings volatility can increase the complexity of the audit process as auditors need to evaluate the source of such instability and its impact on the financial statements. This is especially important in the basic materials sector, which often experiences earnings volatility due to external factors such as commodity prices and market demand.

Research Stages

The research follows these stages: problem formulation, theoretical foundation, hypothesis formulation, data collection, data analysis, conclusions, and suggestions. Data are collected from the population of basic materials sector companies registered on the IDX from 2019-2022, using purposive sampling techniques with certain criteria. The data analysis techniques used are descriptive statistics and panel data regression analysis.

Population and Sample

The research population consists of 96 corporations in the basic materials sector registered on the IDX from 2019-2022. Using purposive sampling techniques, the study obtained 19 samples from an initial population of 26 companies after eliminating 7 outliers. The data used are secondary data obtained from audited financial statements and annual reports available on the IDX website.

Table 1 <Sampling Technique>

Stage			Description
Research Population			96 companies in the basic materials sector listed on the Indonesia Stock Exchange (IDX) for the 2019–2022 period.
Screening	Criteria	(Purposive Sampling)	1. Companies have complete and audited annual financial statements. 2. Companies were not delisted during the 2019–2022 period. 3. Companies have relevant data for the research variables.
Initial Number of Companies			26 companies that met the above criteria.
Outlier Removal			7 companies were excluded from the sample due to extreme data or non-compliance with statistical assumptions.
Final Sample			19 companies.

Data Collection and Data Sources

Data is collected through documentation and literature study. Documentation involves collecting audited financial statements from basic materials sector corporations registered on the IDX for the year 2019-2022. Literature study involves collecting data from scientific journals, articles, literature, and books relevant for this study.

Data Analysis Techniques

Data analysis is conducted using descriptive statistics processed with EViews version 12 and panel data regression analysis. Classical assumption tests are also conducted to confirm the legality of the regression model, including normality, autocorrelation, multicollinearity, and heteroscedasticity tests. However, not all tests are carried out, depending on what model is selected. Panel data regression analysis is useful for identifying correlations between the dependent and independent variables. Data analysis in this study uses panel data regression which allows to test differences between time and between companies simultaneously. Determining the panel data regression model involves several systematic steps to ensure that the model chosen is suitable for the data characteristics and research objectives. The following is an explanation of the steps:

Chow Test

This test is used to determine whether the Common Effect (Pooled Least Squares) or Fixed Effect model is more appropriate for panel data. The Common Effect model assumes that all data has the same characteristics without taking into account differences between individuals or time, while the Fixed Effect model considers specific differences between individuals (companies) in the data. If the test results show a probability value (p-value) below the significance level of 0.05, then the Fixed Effect model is better to use.

Hausman Test

After the Fixed Effect model is selected through the Chow Test, the next step is the Hausman Test to determine whether the Fixed Effect or Random Effect model is more appropriate. This test evaluates the consistency of parameter estimates between the two models. If the test results show a probability value (p-value) below the significance level of 0.05, then the Fixed Effect model is chosen because the estimates are more consistent. Conversely, if the probability value is above 0.05, then the Random Effect model is more suitable.

Lagrange Multiplier (LM) Test

This test is performed if the Chow Test indicates that the Common Effect model is more appropriate, but there is a suspicion that the Random Effect model can be used. The LM test evaluates whether the Random Effect model is better than the Common Effect. If the probability value (p-value) of the test results is below the significance level of 0.05, the Random Effect model is selected.

Classical Assumption Test

After the best model is determined (either Fixed Effect or Random Effect), classical assumption testing is carried out to ensure the validity of the regression model. Classical assumptions include: 1) Multicollinearity test to ensure that there is no strong linear relationship between the independent variables. 2) Heteroscedasticity test to ensure that the residual variance is homogeneous. 3) Autocorrelation Test to ensure that the residuals are not serially correlated. 4) Normality Test to ensure that the residuals are normally distributed.

To ensure the validity and reliability of the data used in this study, several important steps have been taken. Given that this study uses secondary data derived from audited financial statements and annual reports of companies listed on the Indonesia Stock Exchange (IDX), the data sources were carefully selected to ensure the quality and accuracy of the information. Data was obtained only from companies that fulfilled certain criteria, such as completeness of reports and consistent data availability throughout the study period (2019-2022). In addition, to avoid potential bias, incomplete or suspicious data, such as companies that have unverified data or have unaudited audit reports, have been eliminated. The use of official and trusted sources and cross-verification of existing data ensures that the data used in this study is reliable and reflects the actual condition of the companies.

One potential weakness in this research design is the selection of the research time period covering 2019 to 2022, which falls within the COVID-19 pandemic. This global event has the potential to significantly affect a company's financial data, for example through a decrease in revenue, a change in operational strategy, or a change in fiscal policy implemented by the government. However, the effect of the pandemic on firm performance is not explicitly addressed in this study, which could be an important limitation. Research should identify and discuss how the pandemic may affect the variables under study, such as leverage, financial distress, tax risk, and earnings volatility, as well as their impact on audit report lag. Without considering these external factors, the results may not fully reflect the actual conditions or may limit the generalizability of the findings to the post-pandemic period.

Result and Discussion

Table 1 <Descriptive Statistics Test Results>

	Y	X1	X2	X3	X4
Mean	84,26316	0,681237	6,614908	0,292618	0,024816
Standard Deviation	21,87258	0,500571	5,208548	0,371217	0,020098
Minimum	42	0,071	0,612	0,003	0,002
Maximum	147	1,947	23,434	1,814	0,084
Observation	76	76	76	76	76

Source: Data processed by the author using Eviews 12 (2024)

Based on Table 1, audit report lag has an average value of 84.26316, which is larger than the standard deviation value of 21.87258, indicating the ARL for companies in the basic materials sector from 2019-2022 is homogeneous. The maximum value of 147 was held by PT Trias Sentosa Tbk. (TRST) in 2020, and the minimum value is 42 by PT Fajar Surya Fisesa Tbk. (FAWS) in 2019. For the independent variable leverage, the average value of 0.681237 is larger than the standard deviation of 0.50571, also indicating homogeneity, with a maximum value of 1.947 by PT Wijaya Karya Beton Tbk. (WTON) in 2019 and a minimum value of 0.071 by PT Kertas Basuki Rachmat Indonesia (KBRI) in the same year. The financial distress variable shows an mean value of 6.614908, larger than the standard deviation of 5.208548, indicating homogeneity, with a maximum value of 23.434 by PT Kertas Basuki Rachmat Indonesia (KBRI) in 2019 and a minimum value of 0.612 by PT Fajar Surya Fisesa Tbk. (FAWS) in 2022. The tax risk variable has an average value of 0.292618, smaller than the standard deviation of 0.371217, indicating dispersion, with a maximum value of 1.814 by PT Wijaya Karya Beton Tbk. (WTON) in 2022, with a minimum value of 0.003 by PT Semen Baturaja Tbk. (SMBR) in 2022. Finally, the earnings volatility variable has an average value of 0.024816, larger than the standard deviation of 0.020098, indicating homogeneity, with a maximum value of 0.084 by PT Unggul Indah Cahaya Tbk. (UNIC) in 2021, with a minimum value of 0.002 by PT Indocement Tunggul Prakarsa Tbk. (INTP) in 2022.

Classic assumption test

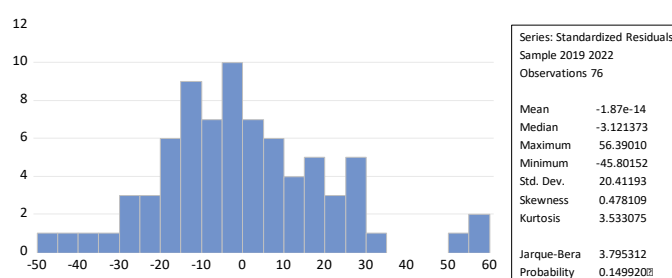


Figure 1 <Normality Test Results. Source: E-views 12 output, data processed by the author (2024)>

In Figure 1, it is known that the probability value is 0.149920, which is higher than the significance level of 0.05. So, these results can be interpreted as the data in this research are normally distributed.

Panel Data Regression Analysis

Selection of Panel Data Regression Models

Redundant Fixed Effects Tests
Equation: Untitled
Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	5.899547	(18,53)	0.0000
Cross-section Chi-square	83.586181	18	0.0000

Figure 2 <Chow Test Results. Source: E-views 12 output, data processed by the author (2024)>

In Figure 2, it is shown that the Chow test results indicate a Cross-section F probability value of 0.000, which is less than 0.05. This means that the result of the Chow test accepts the Fixed Effect Model. Since the outcome is the FEM, the testing proceeds to the Hausman test.

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.080766	4	0.9992

Figure 3 <Hausman Test Result. Source: E-views 12 output, data processed by the author (2024)>

In Figure 3, it is shown that the Chow test results indicate a probability value of 0.9992, which is higher than 0.05. This means that the result of the Hausman test accepts the Random Effect Model. Since the outcome is the Random Effect Model, the testing proceeds to the Lagrange Multiplier (LM) test.

Lagrange Multiplier Tests for Random Effects			
Null hypotheses: No effects			
Alternative hypotheses: Two-sided (Breusch-Pagan) and one-sided (all others) alternatives			
	Test Hypothesis		
	Cross-section	Time	Both
Breusch-Pagan	35.07227 (0.0000)	1.414850 (0.2343)	36.48712 (0.0000)
Honda	5.922185 (0.0000)	-1.189475 (0.8829)	3.346531 (0.0004)
King-Wu	5.922185 (0.0000)	-1.189475 (0.8829)	1.137136 (0.1277)
Standardized Honda	6.912565 (0.0000)	-0.980234 (0.8365)	0.462819 (0.3217)
Standardized King-Wu	6.912565 (0.0000)	-0.980234 (0.8365)	-1.216177 (0.8880)
Gourieroux, et al.	--	--	35.07227 (0.0000)

Figure 4 <Lagrange Multiplier (LM) Test Result. Source: E-views 12 output, data processed by the author (2024)>

In Figure 4, it is shown that the LM test outcome indicate a Breusch-Pagan value of 0.0000, which is less than 0.05. This means that the output of the LM test accepts the REM, and this model will be used in this research.

Panel Data Regression Equation

In Figure 5, we can obtain the panel data regression model equation for this study in explaining leverage, financial distress, tax risk, earnings volatility, and audit report lag, as follows.

$$ARL = 108,5703 - 17,00627X_1 - 0,857013X_2 + 1,779843X_3 - 305,1942X_4 + e$$

Description:

ARL	=	Audit Report Lag
X ₁	=	Leverage
X ₂	=	Financial Distress
X ₃	=	Tax Risk

X_4 = Earnings Volatility
e = Error Term

Dependent Variable: Y				
Method: Panel EGLS (Cross-section random effects)				
Date: 07/25/24 Time: 20:54				
Sample: 2019 2022				
Periods included: 4				
Cross-sections included: 19				
Total panel (balanced) observations: 76				
Swamy and Arora estimator of component variances				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	108.5703	14.64276	7.414607	0.0000
X1	-17.00627	11.08043	-1.534802	0.1293
X2	-0.857013	1.093618	-0.783649	0.4359
X3	1.779843	6.980002	0.254992	0.7995
X4	-305.1942	113.8085	-2.681646	0.0091
Effects Specification				
			S.D.	Rho
Cross-section random			17.93304	0.6213
Idiosyncratic random			14.00155	0.3787
Weighted Statistics				
R-squared	0.127560	Mean dependent var	30.64279	
Adjusted R-squared	0.078408	S.D. dependent var	14.17675	
S.E. of regression	13.60962	Sum squared resid	13150.74	
F-statistic	2.595230	Durbin-Watson stat	1.755579	
Prob(F-statistic)	0.043523			
Unweighted Statistics				
R-squared	0.129100	Mean dependent var	84.26316	
Sum squared resid	31248.52	Durbin-Watson stat	0.738824	

Figure 5 <Random Effect Model Test Results. Source: E-views 12 output, data processed by the author (2024)>

The regression equation can be interpreted as follows: 1) The constant value (α) is 108.5703. This means that if the values of the independent variables—leverage, financial distress, tax risk, and earnings volatility—are constant or zero, then the dependent variable will have a value of 108.5703 units. 2) The regression coefficient for the leverage (X1) is -17.00627. So, for each unit increase in leverage (assuming other independent variables are constant), the audit report lag will decrease by 17.00627 units. 3) The regression coefficient for the financial distress (X2) is -0.857013. So, for each unit increase in financial distress (assuming other independent variables are fixed), the audit report lag will decrease by 0.857013 units. 4) The regression coefficient for the tax risk (X3) is 1.779843. So, for each unit increase in tax risk (assuming other independent variables are fixed), the audit report lag will increase by 1.779843 units. 5) The regression coefficient for the earnings volatility (X4) is -305.1942. So, for each unit increase in earnings volatility (assuming other independent variables are constant), the audit report lag will decrease by 305.1942 units.

Hypothesis Testing

Coefficient of Determination Test (R^2)

In Figure 6, the adjusted R-squared value is 0.078408 or 7.8%. This indicates that the independent variables, which include leverage, financial distress, tax risk, and earnings volatility, explain only 7.8% of the variant in the audit report lag. The remaining 92.2% is influenced by other variables aside from the scope of this research.

Simultaneous Significance Test (F-Test)

In Figure 6, the probability value (F-statistic) is 0.043523, which is less than the significance level of 0.05. It can be concluded that all independent variables—leverage, financial distress, tax risk, and earnings volatility—simultaneously have an effect on the dependent variable, namely ARL for corporations in the basic materials sector registered on the Indonesia Stock Exchange from 2019 to 2022.

Partial Significance Test (t-Test)

Effect of Leverage on Audit Report Lag

According to the partial test results, the regression coefficient for leverage is -17.00627 with a probability value of 0.1293, which is greater than 0.05. In accord with these results, the probability value for leverage is higher than the significance level, this means that leverage has no significant partial correlation with ARL. This result does not align with the hypothesis that states leverage has a positive effect on ARL.

In accord Table 2, comparison of observation data on the average value of the leverage ratio and ARL on 76 available observation data based on test results on companies in the basic materials sector in 2019-2022. Of the 76-observation data, 30 data or 39.5% of the data had debt to equity ratio values above the average, with 17 data experiencing delays above the average, so there were 13 data indicating delays below the average.

Table 2 <Comparison of Audit Report Lag and Leverage>

DER	>Mean ARL		<Mean ARL		Total	%
	Jumlah	%	Jumlah	%		
> 0,68	17	22.4%	13	17.1%	30	39.5%
< 0,68	24	31.6%	22	28.9%	46	60.5%
Total	41	54%	35	46%	76	100%

Source: data processed by the author (2024)

Then there are 46 data or 60.5% of the data that have debt to equity ratio values below the average with 24 data experiencing delays above the average, so there are 22 data indicating delays below the average. Apart from that, it can be seen in the table that the higher the DER, then the higher the ARL (22.4% > 17.1%) and the lower the DER, then the higher the ARL (31.6% > 28.9%) from these results it can be concluded If the effect is not consistent, the results of this linkage test have no effect on ARL. The direction of influence can be seen from the highest percentage, namely 31.6%, where the lower the DER, the higher the ARL, which means the influence of this variable is in a negative direction.

Theoretically, companies with high leverage levels will have greater financial risks and more complicated structures, which require more time for auditors to complete the audit and produce financial statements. However, the results of this study show that this relationship is not always the case. One possible explanation is that other more dominant factors, such as the level of managerial policies or the level of risk associated with the firm, may influence ARL more than simply the amount of leverage. The output of this research is appropriate with the findings of Rani & Triani (2021), which indicate that leverage does not affect ARL. However, they are not parallel with the research by Nouraldeem et al., (2021) and Bawono et al., (2023), which explain that leverage has a positive effect on ARL.

This difference in findings can be explained by several factors. First, it is possible that the highly leveraged companies in our sample have developed efficient audit policies and procedures, which may reduce the time required to complete the audit despite having a more complex debt structure. Second, the effect of leverage on ARL may also vary depending on the industry context or time period used in the study. The effect of leverage on ARL in the basic materials sector may be weaker than in other sectors due to different operational characteristics. Therefore, although theory and previous research suggest that leverage has the potential to influence ARL, the results of this study highlight that other variables, such as internal audit quality or other external factors, may be more significant in determining the duration of ARL.

Effect of Financial Distress on Audit Report Lag

In accord with the partial test results, the regression coefficient for financial distress is -0.857013 with a probability value of 0.4359, which is higher than 0.05. In accord with these results, the probability value for financial distress is higher than the significance level, it means that financial distress has no significant partial correlation with ARL. This result does not align with the hypothesis stating that financial distress has a positive effect on ARL.

Table 3 Comparison of Audit Report Lag and Financial Distress>

Financial Distress	>Mean ARL		<Mean ARL		Total	%
	Jumlah	%	Jumlah	%		
> 6,61	16	21.1%	13	17.1%	29	38.2%
< 6,61	25	32.9%	22	28.9%	47	61.8%
Total	41	54%	35	46%	76	100%

Source: data processed by the author (2024)

Table 3 shows a comparison of observation data on the value of the financial distress ratio and ARL on 76 available observation data based on test results on companies in the basic materials sector in 2019-2022. Of the 76-observation data, 29 data or 38.2% of the data had z-score ratio values above the average with 16 data experiencing delays above the average, so there were 13 data indicating delays below the average. Then there are 47 data or 61.8% of the data that have z-score ratio values below the average with 25 data experiencing delays above the average, so there are 22 data indicating delays below the average. Apart from that, it can be seen in the table that the higher the z-score, then the higher the ARL (21.1% > 17.1%) and the lower the z-score, then the higher the ARL (32.9% > 28, 9%) from these results it can be concluded that the effect is not consistent, so the outcome of this linkage test, financial distress has no effect on ARL. The direction of the influence can be seen from the highest percentage, namely 32.9%, where the lower the z-score, the higher the ARL, which means the influence of this variable is in a negative direction.

In this study, it was found that financial distress has no significant effect on audit report lag (ARL). Theoretically, financial distress is expected to increase ARL because companies experiencing financial difficulties tend to have problems in preparing accurate financial reports and require more time for auditors to verify the information presented. However, the results of this study show that companies in financial distress do not always require longer audit time. One explanation is that even though companies face financial distress, they may have more established reporting systems or sufficient resources to speed up the audit process, thus not significantly extending the ARL duration.

Several previous studies have shown that financial distress tends to lengthen ARL, because auditors need to be more careful in examining the financial statements of companies that are in financial distress. The outcomes of this study are appropriate with the findings of Pingass & Dewi (2022) and Imanniar (2020), which show that financial distress does not affect ARL. However, this finding is not parallel with the studies by Park & Choi (2023) and Gustiana & Rini (2022), which state that financial distress has a positive correlation on ARL. However, the findings of this study differ from these results, which may be due to differences in the sample or methodology used, as well as the specific conditions of companies listed on the Indonesia Stock Exchange during the study period (2019-2022).

Another possibility is that financially distressed companies in Indonesia are more likely to work with auditors who have experience in handling similar cases, thus reducing the duration of ARL despite the company's financial condition. In addition, companies facing financial distress may also make more effort to improve their credibility in the eyes of investors and regulators by accelerating the audit and reporting process. Thus, although theory and previous research suggest that financial distress has the potential to increase ARL, the results of this study suggest that other factors, such as the quality of internal audit, the level of managerial oversight, and auditor experience, may determine the duration of ARL more than the financial condition of the company itself.

Effect of Tax Risk on Audit Report Lag

In accord with the partial test results, the regression coefficient for tax risk is 1.779843 with a probability value of 0.7995, which is greater than 0.05. In accord with these results, the probability value for tax risk is higher than the significance level, it means that tax risk has no significant partial correlation with audit report lag. This output does not align with the hypothesis stating that tax risk has a positive correlation on ARL.

Table 4 <Comparison of Audit Report Lag and Tax Risk>

Tax Risk	>Mean ARL		<Mean ARL		Total	%
	Total	%	Total	%		
> 0,29	14	18.4%	8	10.5%	22	28.9%
< 0,29	27	35.5%	27	35.5%	54	71.1%
Total	41	54%	35	46%	76	100%

Source: data processed by the author (2024)

Table 4 shows a comparison of observation data on the average value of the standard deviation ratio of tax risk and ARL on 76 available observation data based on test results for companies in the basic materials sector in 2019-2022. Of the 76-observation data, 22 data or 28.9% of the data had CETR ratio values above the average with 14 data experiencing delays above the average, so there were 8 data indicating delays below the average. Then there were 54 data or 71.1% of the data had CETR ratio values below the average with data experiencing delays above the average and indicated delays below the average, each of which was 27 data. Apart from that, it can be seen in the table that the higher the CETR, then the higher the ARL (18.4% > 10.5%), the lower the CETR, then the higher the ARL (35.5%), and the lower the CETR, the higher the ARL. the lower the ARL (35.5%), so from these outputs it can be concluded that the effect is inconsistent, so the outputs of this linkage test tax risk have no effect on ARL.

In this study, it was found that tax risk had no significant effect on audit report lag (ARL). In theory, tax risk is expected to extend ARL, because high tax risk can cause auditors to take longer to ensure that the company's financial statements comply with applicable tax regulations. Companies with high tax risk tend to have uncertainty in terms of their tax obligations, which may affect the accuracy of financial statements and require more in-depth examination by auditors. However, the results of this study indicate that although companies face high tax risk, it does not always affect the duration of ARL. This could be due to companies having good tax reporting procedures or auditors being familiar with the situation, which reduces the time required for the audit process. The outcome of this research is appropriate with the findings of Suwardi & Saragih (2023), which state that tax risk does not affect ARL. However, this result is not in the same direction as Abernathy et al., (2021), who state that tax risk has a positive correlation on ARL.

However, the findings of this study contradict these previous studies. This could be influenced by differences in the research context, particularly in Indonesia, where companies may prioritise tax compliance and have more efficient reporting processes to mitigate potential high tax risks. Another possibility is that companies in Indonesia, especially those listed on the Indonesia Stock Exchange, may already comply strictly with tax regulations and have strong internal control systems, which minimise the potential for errors or discrepancies in their tax reports. This may reduce the time required for auditors to verify tax-related information, thus not significantly extending the ARL duration. In addition, companies may already anticipate tax risks and liaise with auditors to resolve tax issues early, allowing the audit to be completed more quickly. Thus, although theory and previous research suggest a relationship between tax risk and ARL, the results of this study indicate that other factors, such as the quality of the company's internal controls and auditor experience, play a more important role in determining the duration of ARL than just the tax risk factor itself.

Effect of Earnings Volatility on Audit Report Lag

In accord with the outputs of the partial test conducted, the regression coefficient value for earnings volatility is -305.1942 with a probability value of $0.0091 > 0.05$. In accord with these results, the probability value of earnings volatility is lower than the significance level, it means that earnings volatility has a negative correlation with ARL. This finding is not consistent with the hypothesis that earnings volatility positively affects ARL.

Table 5 <Comparison of Audit Report Lag and Earnings Volatility>

EVOL	>Mean ARL		<Mean ARL		Total	%
	Total	%	Total	%		
> 0,02	10	13.2%	14	18.4%	24	31.6%
< 0,02	31	40.8%	21	27.6%	52	68.4%
Total	41	54%	35	46%	76	100%

Source: data processed by the author (2024)

Table 5 above shows a comparison of observation data on the average value of the earnings volatility ratio and audit report lag on 76 available observation data based on test results for companies in the basic materials sector in 2019-2022. Of the 76-observation data, 24 data or 31.6% of the data had earnings volatility ratio values above the average with 10 data experiencing delays above the average, so there were 14 data indicating delays below the average. Then there are 52 data or 68.4% of the data that have earnings volatility ratio values below the average with 31 data experiencing delays above the average, so there are 21 data indicating delays below the average. Apart from that, it can be seen in the table that the higher the EVOL, the lower the ARL (18.4% > 13.2%) and the lower the EVOL, the higher the audit report lag (40.8% > 27.6%) from these outputs it can be concluded that the effect is consistent, so the outputs is that EVOL has an effect on ARL. The direction of the influence can be seen from the highest percentage, namely 40.8%, where the lower the earnings volatility, the higher the ARL, which means the influence of this variable is in a negative direction. So, the results of this linkage test earnings volatility have a negative effect on audit report lag.

This study shows that earnings volatility has a significant negative effect on audit report lag (ARL), which means that the higher the earnings volatility of a company, the faster the audit process. This can be explained by signalization theory, where companies with high earnings volatility tend to want to provide clearer signals to the market and other stakeholders regarding the transparency and accuracy of their financial statements. With the increased need to reassure investors and regulators that their financial statements are trustworthy, such companies may accelerate the audit process to avoid the impression that they are trying to hide important or unreliable information. Therefore, even though companies with high earnings volatility face challenges in ensuring financial stability, they are likely to make extra efforts to expedite the audit so that their financial statements can be published soon. The results of this study align with the findings reviewed previously by Bryan & Mason (2020), which state that tax risk negatively affects audit report lag. However, it is not in the same direction with Lestari et al., (2022), who state that earnings volatility has a positive correlation on audit report lag.

In this context, earnings volatility may motivate firms to be more proactive in completing the audit process quickly, so that auditors can complete their tasks without delay. In addition, companies that have high earnings volatility may feel more pressure to maintain their reputation in the eyes of the public and regulators, so they are faster in submitting audited reports to avoid negative perceptions of their performance. Companies that report more volatile results tend to have a faster audit process as auditors also try to reduce the risk of errors in the financial statements caused by the fluctuations. Auditors will endeavour to identify the source of earnings volatility and provide a clear opinion in a relatively shorter time. This finding provides a different view to research that suggests that revenue volatility tends to lengthen the ARL, which may occur because some companies facing high revenue volatility do not have good reporting mechanisms to handle such fluctuations.

However, in the Indonesian context, firms' efforts to speed up the audit and financial reporting process may be more dominant compared to the challenges posed by earnings volatility, resulting in a significant negative effect on ARL.

Limitation and Future Research

The limitation of this study lies in the use of secondary data that only covers the period 2019-2022, so the results may be affected by unstable economic conditions due to the COVID-19 pandemic, which could affect company performance and audit behaviour. In addition, this study is limited to the basic materials sector listed on the Indonesia Stock Exchange, so the results may not be fully generalisable to other sectors or different markets. For further research, it is recommended to expand the sample by covering a longer period and other sectors, as well as paying attention to external factors such as regulatory changes or economic crises that may affect the relationship between the variables studied and audit report lag. Further research can also explore other factors that may affect audit speed, such as auditor quality or financial statement complexity.

Conclusion

The conclusion of this study shows that in the basic materials sector listed on the Indonesia Stock Exchange in the 2019-2022 period, only earnings volatility has a significant negative effect on audit report lag (ARL). This indicates that companies with high earnings volatility tend to complete their audit process faster to maintain the credibility of financial statements and avoid negative perceptions from the market. On the other hand, the variables of leverage, financial distress, and tax risk were not shown to have a significant effect on ARL, which suggests that these factors are not enough to influence the speed of audit reporting in this sector during the period under study. This study provides new insights into the dynamics between earnings volatility and audit velocity in the context of basic materials companies in Indonesia, as well as contributing to the understanding of how company-internal factors can influence timeliness in financial reporting.

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