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The Influence of Leverage and Business Complexity on Audit Delay: Does Company Size Matter?

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Abstract
Purpose: This research investigates several factors that cause audit delays in mining companies. Agency theory analyses audit delays by examining the relationship between various factors.
Method: The research analysis units numbered 200 and 40 companies were observed by sampling criteria obtained from mining companies in 2018-2022. Data analysis uses moderated regression analysis (MRA) to test hypotheses.
Findings: Based on the analysis, the research results show that high leverage causes audit delays, and a "qualified audit" opinion will encourage companies to immediately publish financial reports. Business complexity and profitability are not predictors of audit delay. In addition, company size can moderate the relationship between leverage and audit delay but not with other variables.
Originality/Value: One of the unique aspects of our research is the use of company size as a moderator. This factor, often overlooked, can significantly influence the relationship between various variables. In essence, company size serves as a barometer of a company's ability to effectively manage its assets or equity, adding a new dimension to our understanding of audit delays.
Keywords: Audit delay, Leverage, Business complexity, Auditor's opinion, Company size
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1. Introduction

The reliability and credibility of financial reports are fundamental to maintaining investor confidence and ensuring market efficiency. As a critical component of financial oversight, auditing enhances transparency and accountability. However, the process remains inherently complex and time-intensive, particularly

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for firms with intricate financial structures (Adela & Badera, 2022). Otoritas Jasa Keuangan (OJK) issued Regulation No. cto strengthen financial reporting discipline. Publicly listed companies must submit audited financial reports no later than the third month of the subsequent fiscal year (OJK, 2022). Audit delay remains a persistent issue despite these regulatory measures, raising concerns regarding corporate governance and compliance.

Empirical data from the Indonesia Stock Exchange (IDX) indicate an increasing trend in audit delays, with non-compliant issuers rising from 10 in 2018 to 50 in 2022. This issue is particularly pronounced in the mining sector, where the proportion of delayed submissions escalated from 25% to 42% annually. Although regulatory authorities have imposed administrative sanctions, including written warnings and fines, the effectiveness of these penalties remains uncertain (Bursa Efek Indonesia, 2022). This underscores the need to examine the underlying determinants of audit delay, particularly in emerging markets with distinct regulatory frameworks.

Prior research suggests that audit delay is influenced by both internal and external factors (Adela & Badera, 2022; Carp & Istrate, 2021; Chang et al., 2021). Internally, firm-specific characteristics such as leverage, business complexity, and profitability have been linked to variations in audit completion time. Factors such as auditor opinion and audit firm size influence financial reporting timeliness. However, empirical findings remain inconsistent across different economic contexts, necessitating further investigation in emerging market settings.

As a measure of financial risk, leverage has been associated with extended audit timelines due to increased auditor scrutiny (Fauzan et al., 2019; Juanda & Lamury, 2021). While some studies confirm a positive relationship between leverage and audit delay (Saputri & Asrori, 2019), others find no significant effect (Utama et al., 2021), suggesting that governance mechanisms may mitigate this relationship. Similarly, business complexity, often measured by the number of subsidiaries, has been found to prolong the audit process due to increased transaction volumes and verification requirements (Khan et al., 2023). Although many studies support this positive association advancements in audit technology and risk-based auditing approaches may counterbalance this effect (Habib & Huang, 2019; Liu et al., 2021; Hussin et al., 2018).

Auditor opinion also plays a crucial role in audit delay. Firms receiving an unqualified opinion are more likely to submit reports on time, whereas modified opinions may lead to prolonged discussions and dispute resolution (Adela & Badera, 2022; Bahtiar et al., 2021; Chung et al., 2019). However, some studies (Amin et al., 2021; Marni et al., 2019) indicate no significant relationship,

suggesting that firm-specific characteristics may exert a more substantial influence on audit completion times. Meanwhile, profitability, as an indicator of financial health, has been linked to audit timeliness, with highly profitable firms expediting financial reporting to signal positive performance to investors (Abdillah et al., 2019). While multiple studies confirm this relationship (Chalu, 2021; Hassan, 2016), others argue that profitability does not significantly impact audit delay (Lai, 2019; Li et al., 2022), highlighting the need for further research in emerging markets.

Despite extensive research, two key gaps remain. First, most studies focus on developed economies, providing limited empirical evidence from emerging markets such as Indonesia. Second, the role of firm size as a moderating variable has been largely overlooked. Larger firms with more complex financial structures often possess stronger internal controls and resources that could mitigate audit delays. This study introduces firm size as a moderating factor, offering a novel perspective on how organizational characteristics influence audit completion timelines.

Given this background, this study examines the effects of leverage, business complexity, profitability, and auditor opinion on audit delay and analyzes the moderating role of firm size in these relationships. Accordingly, this study addresses the following research questions: (1) How do leverage, business complexity, profitability, and auditor opinion influence audit delay? (2) Does firm size moderate the relationship between these determinants and audit delay?

Theoretically, this study extends Agency Theory by illustrating how principal-agent conflicts contribute to variations in audit timeliness. Managers may delay financial reporting to withhold unfavorable information, yet firm size may exacerbate or mitigate this tendency depending on governance mechanisms and resource allocation. By incorporating firm size as a moderating variable, this study provides a nuanced contribution to the audit delay literature. From a practical perspective, the findings offer valuable insights for corporate managers seeking to enhance audit efficiency, assist regulators in strengthening compliance frameworks, and support investors in evaluating financial reporting risks. This research contributes to the broader discourse on audit timeliness and regulatory enforcement by addressing these issues, particularly in emerging market contexts.

2. Literature Review

2.1. Agency Theory

Agency theory explains a contractual relationship in which one or more people directs another person to carry out a service on behalf of the principal and allows the agent to make the best decisions for the principal (Jensen & Meckling, 1976). The agent will process the information provided by the principal so that decisions can be made by utilizing the results of this processing. Implementation in the field of conformity of information only sometimes occurs between the two parties, resulting in information asymmetry and giving rise to agency problems. Agency problems arise when people are selfish, so conflict arises when various interests collide in a joint activity (Dianova et al., 2021). External auditors are third parties or independent intermediaries whose presence is necessary between the principal and the agent to evaluate management's performance and obligations. Companies need external auditors to ensure the suitability of the manager's actions as an agent towards the interests of the owner or principal.

2.2. Leverage and Audit Delay

Leverage is a ratio that can be used to assess debt management in a company (Kristanti & Mulya, 2021). Leverage can show the level of company health. The higher the level of leverage a company has, the higher the risk of audit delays. In line with the disclosure of agency theory, there is a conflict of interest between the principal and the manager as an agent who can use his discretion to influence decisions, including debt policy which has an impact on the company's financial risk. Several study report leverage has a positive effect on audit delay (Fauzan et al., 2019; Saputri & Asrori, 2019; Utama et al., 2021). The more a company has a high level of leverage, the longer the audit delay will occur because management will delay issuing financial reports.

$\mathbf{H_1}$: Leverage has a positive effect on audit delay.

2.3. Business Complexity and Audit Delay

Business complexity is the level of complexity that can be assessed from the number of operating unit locations (branches) owned by the company (Armand et al., 2020). Companies with high operational complexity cause auditors to take a long time to conduct audits, and audit delays become longer. Independent auditors must audit the subsidiary branches and then audit the parent company, which requires a lot of time and costs. In line with agency theory, if a company's operational activity is high, the auditor must reveal much information, resulting in high agency costs and making the audit

process take longer. Several studies report that the business complexity has a positive effect on audit delay (Habib & Huang, 2019; Khan et al., 2023; Liu et al., 2021; Hussin et al., 2018). The more complex a company is, the longer the audit process because the auditing scope will be wider.

H_2: The business complexity has a positive effect on audit delay.

2.4. Auditor Opinion and Audit Delay

Auditor opinion is an assessment of the fairness of an auditor of the financial reports provided by a company (Astuti et al., 2021). When an Unqualified Opinion opinion is obtained in a company's financial statements, the audit delay will be faster, and vice versa. Giving an unqualified opinion by an auditor is good news for a company. If a company's audited financial report is published on time, it will maintain the relevance of the information in the financial report. When the information in financial reports is relevant, it will influence decision-making. According to agency theory, auditors are independent verifiers in financial reports submitted by managers as agents to the principal (Jensen & Meckling, 1976). The lack of value in the information provided to principals causes information asymmetry, which can cause rumours about the financial health and performance of the company to spread. Several studies report auditor opinion has negatif influence on audit delay (Adela & Badera, 2022; Bahtiar et al., 2021; Chung et al., 2019; Su'un et al., 2020). When a company obtains an appropriate opinion on its financial reports, the financial reports will be published more quickly and shorten audit delays.

H_3: Auditor opinion has a negative effect on audit delay.

2.5. Profitability and Audit Delay

Profitability is a ratio that can describe a company's ability to generate profits in connection with various types of sales, capital from shares and assets (Sihombing & Chan, 2021). A high profitability value explains the company's success in earning profits. Profitable companies will undoubtedly reveal financial reports more quickly because they have good news to convey to investors through financial reports. The connection between agency theory and profitability is that when the company's profitability is high, management acts as an agent to accelerate financial reporting to convey "good news" to principals who use it in making decisions for the company (Jensen & Meckling, 1976). As a result, problems in the interests of agents and principals are reduced. Several studies report audit delays are negatively influenced by company (Abdillah et al., 2019; Chalu, 2021; Hassan, 2016; Li et al., 2022; Hussin et al., 2018).

When a business experiences a significant increase in profits, the audit process is accelerated so that the good news can be shared as soon as possible.

H_4: Profitability has a negative effect on audit delay.

2.6. Moderating Effect

A high level of leverage in an issuer can indicate that the issuer's financial condition is experiencing difficulties, so that this will be bad news (Rani & Triani, 2021). Company size can be moderated because funding from external parties in large companies tends to be stricter due to internal controls that are better. The existence of a debt policy in a company is a form of the manager's discretion as an agent. This can occur due to information asymmetry in the interests that exist between the principal and the manager as an agent.

Based on research by Marcelino and Mulyani (2021), Company size can be moderate because more effective control systems tend to be owned by large companies, resulting in low leverage levels. Companies are not required to reduce leverage, and financial reports can be submitted on time. Research conducted by Lubis (2022), Company size can be moderated because large companies have adequate collateral for debts to third parties, so even though the company's debt is significant, if it is balanced with the number of the company's assets, auditors do not need to worry about the company's condition.

H_5: Company size weakens the influence of leverage on audit delay.

An auditor gives an auditor opinion to express considerations about whether an entity's financial statements are presented relatively by PABU (Adela & Badera, 2022). Company size can be moderated because large companies' internal control systems are more effective torors in presenting financial reports. In line with agency theory, when financial reports have a low error rate, they will receive an unqualified opinion, which can speed up the audit process. In this way, managers as agents can provide their financial reports promptly to the principal and avoid agency problems. The auditor's role is as an independent verifier in the financial reports submitted by the manager as an agent to the principal. The lack of value in the information provided to principals causes information asymmetry, which can cause rumours about the financial health and performance of the company to spread.

Based on research by Asmedi (2022), large-scale companies with high profitability receiving an Unqualified Opinion opinion is good news. This news made the audit delay faster because the company accelerated the publication of its financial reports.

Research conducted by Cahyati and Anita (2019) shows that large-scale companies will speed up the delivery of financial reports that accept unqualified opinions to the public, because this is good news for the market.

H_6: Company size strengthens the influence of auditor opinion on audit delay.

The high level of profitability of a company can indicate the company's level of achievement in achieving the quantity of profits generated (Adela & Badera, 2022). Company size can be a moderation because if the company gets bigger, the resources the company has to maximize profitability will also get bigger. The existence of high profitability can make managers, as agents, want to publish their financial reports to avoid agency problems immediately, and the auditing process becomes faster because this is good news for the company.

Based on research by Marcelino and Mulyani (2021), High profitability is good news for a company, so financial reports should be published soon. In this way, the financial report audit process will be completed more quickly, and the company will comply with applicable regulations by providing financial reports in a disciplined manner. Research conducted by Kristanti and Mulya (2021), large companies are likely to have reasonable internal control, so they can involve many parties, from internal or external, to the company and are independent, which will help the company's audit process.

H_7: Company size strengthens the influence of profitability on audit delay.

3. Research Method

This study employs a quantitative approach using a causal-comparative research design, which is commonly used to analyze cause-and-effect relationships by comparing different conditions or groups (Creswell & Creswell, 2018). This approach is suitable for examining how firm-specific characteristics influence audit delay while considering the moderating effect of firm size.

The population of this study consists of mining sector companies listed on the Indonesia Stock Exchange (IDX) from 2018 to 2022. The mining sector was chosen due to its high operational complexity and stringent regulatory requirements, which can contribute to audit delays (Habbash & Haddad, 2020). To ensure that the selected sample aligns with the research objectives, this study applies a purposive sampling technique based on the following criteria: (1) companies that were publicly listed in the IDX mining

sector between 2018 and 2022, (2) companies that published audited financial reports during the observation period, and (3) companies with complete financial and governance data required for variable measurement (Bougie & Sekaran, 2020).

This study uses three types of variables: a dependent variable (audit delay), independent variables (leverage, business complexity, auditor opinion, and profitability), and a moderating variable (firm size). The measurement indicators used in this study are presented in the following table.

Table 1. Variable Measurement

Variable	Measurement (Proxy)	Reference
Audit Delay (AD)	Closing date of the financial year – Publication date of audited reports	(Abdillah et al., 2019)
Leverage (LEV)	Total debt / Total assets	(Keffala, 2021)
Business Complexity (KOMP)	Number of subsidiaries	(Khan et al., 2023)
Audit Opinion (OA)	Dummy: Unqualified = 1, Others = 0	(Adela & Badera, 2022)
Profitability (PROF)	NPM = Net income after tax / Total assets	(Mahoney & Roberts, 2007)
Firm Size (UP)	ln(Total Assets)	(Li et al., 2022)

To test the hypotheses, this study applies Moderated Regression Analysis (MRA), which allows for examining whether firm size moderates the relationship between audit delay determinants and financial reporting timeliness. MRA extends multiple regression analysis by testing interaction effects between independent and moderating variables (Baron & Kenny, 1986). Given that the dataset consists of panel data (a combination of cross-sectional and time-series observations), panel data regression is used instead of ordinary least squares (OLS) regression. To determine whether a fixed-effects or random-effects model is more appropriate, a Hausman test is conducted, which assesses whether individual effects are correlated with the regressors (Baltagi, 2021). The regression model used in this study is formulated as follows:

$$AD = \alpha + \beta_1 LEV + \beta_2 KOMP + \beta_3 OA + \beta_4 PROF + \beta_5 UP + \beta_6 LEV*UP + \beta_7 OA*UP + \beta_8 PROF*UP + e \quad \ldots\ldots(1)$$

where AD represents audit delay; LEV denotes leverage; KOMP refers to business complexity; OA signifies auditor opinion; PROF represents profitability; UP denotes firm size; α is the intercept, β_1 to

β_8 are the estimated coefficients of the independent and interaction terms, and e represents the error term.

4. Results and Discussion

4.1. Descriptive Statistics

Descriptive statistical analysis provides an overview of the characteristics of the data used in this study, offering insights into each variable's distribution and central tendency. Table 2 presents the descriptive statistical results, including the minimum, maximum, mean, and standard deviation values. The leverage variable exhibits a relatively low variation, as indicated by a standard deviation of 0.195, smaller than the mean value of 0.464. This suggests that most firms in the sample maintain similar debt-to-asset ratios, with leverage values concentrated around the mean. Additionally, the mean leverage value is closer to the maximum (0.961) than the minimum (0.088), implying that a significant portion of the firms operate with high levels of debt financing.

Table 2. Descriptive Statistical Test Results

Variable	Minimum	Maximum	Mean	Std. Deviation
Leverage	0.088	0.961	0.464	0.195
business complexity	0.000	107.000	14.030	20.472
Auditor Opinion	0.000	1.000	0.840	0.363
Profitability	0.000	2.610	0.156	0.237
Company Size	14.828	32.237	26.738	4.473
Audit Delay	31.000	202.000	88.710	26.318

Business complexity, proxied by the number of subsidiaries, demonstrates substantial variation, as evidenced by a standard deviation of 20.472, which exceeds the mean value of 14.030. This indicates a high degree of heterogeneity among firms regarding operational complexity. The mean value is closer to the minimum (0), suggesting that while some firms have multiple subsidiaries, a considerable proportion of firms in the sample operate with fewer or no subsidiaries, reflecting a lower level of operational complexity. The auditor opinion variable, a binary measure, shows low dispersion, with a standard deviation of 0.363, smaller than the mean value of 0.840. This suggests that most (84%) firms received an unqualified audit opinion, while only a few obtained modified opinions. The proximity of the mean value to the maximum (1.000) confirms that most firms in the sample maintain high audit quality in obtaining unqualified audit reports.

Profitability, measured using Net Profit Margin (NPM), displays considerable variability, as reflected by a standard deviation (0.237)

that is higher than the mean value (0.156). The mean value is closer to the minimum (0.000), suggesting that many firms in the sample operate with low profitability levels, with some reporting zero or negative profitability. This highlights potential financial challenges within the mining sector, where profitability can be highly volatile due to fluctuating commodity prices and operational costs. The company size variable, measured as the natural logarithm of total assets, exhibits a relatively low dispersion, with a standard deviation of 4.473, lower than the mean value of 26.738. The proximity of the mean value to the maximum (32.237) indicates that the majority of firms in the sample are relatively large. This suggests that larger firms dominate the dataset, which may influence financial reporting timeliness due to their established internal controls and audit processes.

Table 3. Hypothesis Test Results

Variable	Beta	Sig
Leverage	11.271	0.006
Business Complexity	-0.029	0.098
Auditor Opinion	-2.356	0.034
Profitability	7.243	0.116
Leverage*Company Size	-3.214	0.008
Auditor Opinion*Company Size	0.630	0.059
Profitability*Company Size	-2.167	0.109

4.2. The Effect of Leverage on Audit Delay

The hypothesis test results indicate that leverage has a significant positive effect on audit delay, with a regression coefficient of 11.271 and a significance level of 0.006 ($p < 0.05$). These findings suggest that firms with higher leverage experience more extended audit completion due to increased auditor scrutiny. Debt-heavy firms often have complex financial structures, making it necessary for auditors to conduct in-depth risk assessments, validate debt covenants, and ensure compliance with financial disclosure regulations. This additional audit effort contributes to extended audit durations.

In line with agency theory, firms with high leverage levels often exhibit heightened conflicts between management and stakeholders, particularly concerning debt management strategies. Highly leveraged firms may attempt to manipulate earnings to meet debt covenant requirements, exacerbating information asymmetry (Jensen & Meckling, 1976). As a result, auditors must conduct more rigorous testing to detect potential misstatements or hidden liabilities, increasing the time required for audit completion. This aligns with prior studies report that firms with higher debt ratios tend to experience prolonged audit delays due to the additional audit

effort required to assess debt-related risks (Fauzan et al., 2019; Gunawan & Sjarief, 2022; Saputri & Asrori, 2019). Moreover, financial reporting complexity increases in highly leveraged firms, particularly in industries with extensive capital investments, such as the mining sector, where long-term liabilities and asset valuation adjustments are standard. Auditors must evaluate debt covenants, loan agreements, and impairment assessments, extending the audit timeline.

4.3. The Influence of Business Complexity on Audit Delay

The hypothesis test results indicate that business complexity does not significantly affect audit delay, as reflected in a regression coefficient of -0.029 and a significance level of 0.098 ($p > 0.05$). These findings suggest that contrary to theoretical expectations, a firm's operational complexity—measured by the number of subsidiaries—does not necessarily prolong the audit process. While previous studies suggest that highly complex firms require more extensive audit procedures due to more significant transaction volumes, inter-subsidiary reconciliations, and international compliance requirements, the results of this study imply that modern audit methodologies and risk-based approaches may offset these challenges.

These findings challenge agency theory, which posits that increased operational complexity exacerbates information asymmetry and agency costs, requiring auditors to devote more time and effort to mitigate risks (Jensen & Meckling, 1976). Financial data is often fragmented across multiple entities in highly complex firms, leading to potential inconsistencies and higher audit risk (Khan et al., 2023). However, this study's lack of a significant relationship suggests that corporate governance mechanisms, including strong internal audit functions, enterprise risk management systems, and centralized reporting policies, effectively reduce information asymmetry and prevent audit delays (Liu et al., 2021).

One explanation for these findings is the increasing adoption of audit automation, artificial intelligence (AI), and data analytics in modern auditing. These technologies allow auditors to efficiently analyze large-scale transactional data, detect anomalies, and automate risk assessments without significantly increasing audit duration (Liu et al., 2021). In this context, even firms with high business complexity may not experience prolonged audits, as advanced tools enable real-time subsidiary audits, predictive analytics for risk detection, and automated consolidation of financial reports.

The findings of this study align with prior research by (Habib & Huang, 2019; Liu et al., 2021; Sobhan et al., 2024), which also found

no significant impact of business complexity on audit delay. However, contradictory evidence from (Abdillah et al., 2019) suggests that firms with highly complex business structures may experience audit delays when corporate transparency is low, internal controls are weak, or audit firms lack sector-specific expertise. This discrepancy underscores the importance of contextual factors, such as industry-specific regulations, audit firm specialization, and enforcement mechanisms, in determining whether business complexity affects audit timeliness (Hussin et al., 2018).

4.4. The Influence of Auditor Opinion on Audit Delay

The hypothesis test results indicate that auditor opinion significantly negatively affects audit delay, as evidenced by a regression coefficient of -2.356 and a significance level of 0.034 ($p < 0.05$). These findings suggest that firms receiving an unqualified audit opinion are likelier to publish their audited financial statements on time, reducing audit delay risk. An unqualified opinion is a positive assurance of a firm's financial integrity, internal control effectiveness, and compliance with accounting standards, leading to fewer audit complexities and a more streamlined review process.

Conversely, firms receiving qualified, adverse, or disclaimer opinions are subject to heightened audit scrutiny, as auditors must conduct additional testing, document significant audit findings, and provide justifications for opinion modifications. This is consistent with regulatory frameworks such as IFRS and GAAP, which require auditors to assess whether financial statements represent a firm's financial position fairly. In highly regulated industries—such as banking, insurance, and capital-intensive sectors like mining—companies receiving modified audit opinions may experience delays due to regulatory reporting adjustments, auditor-client disputes, and the need for extensive disclosures (DeFond et al., 2011).

These findings align with agency theory, which posits that auditors act as external monitors to mitigate information asymmetry between managers (agents) and shareholders (principals) (Jensen & Meckling, 1976). When corporate governance mechanisms are weak, managers may delay audit query resolutions, restrict auditor access to key financial data, or engage in earnings management, extending the audit completion timeline (Amin et al., 2021; Marni et al., 2019). In contrast, firms with strong governance frameworks, effective audit committees, and robust financial oversight tend to experience shorter audit delays as they promote efficient communication and transparency between auditors and management (Bahtiar et al., 2021; Mulyadi et al., 2022; Su'un et al., 2020).

4.5. The Effect of Profitability on Audit Delay

The hypothesis test results indicate that profitability does not significantly affect audit delay, as reflected in a regression coefficient of 7.243 and a significance level of 0.116 ($p > 0.05$). These findings suggest that the level of profitability—whether high or low—does not influence the timeliness of financial report submission. This implies that both highly profitable and less profitable firms adhere to similar audit completion timelines, likely due to regulatory requirements, audit complexity, and industry-specific compliance mandates.

From an agency theory perspective, firms with high profitability are incentivized to accelerate financial report publication to enhance investor confidence and signal strong financial health (Jensen & Meckling, 1976). This aligns with signaling theory, which posits that firms use financial disclosures to communicate value to investors and reduce information asymmetry (Spence, 1973). However, the findings of this study indicate that this effect is not significant, suggesting that external audit complexity, industry regulations, and corporate governance mechanisms may play a more dominant role in influencing audit timeliness.

One possible explanation for this finding is that audit firms adopt standardized risk-based audit approaches, which ensure that audit complexity, rather than financial performance, drives the duration of the audit process. Highly profitable firms may have stronger internal controls, but auditors are still required to perform comprehensive risk assessments and compliance checks, particularly in regulated industries such as banking and telecommunications. This suggests that profitability alone may not significantly alter audit timelines if audit firms follow uniform engagement procedures.

These findings align with prior research by (Adela & Badera, 2022; Su'un et al., 2020), which also found no significant relationship between profitability and audit delay. However, contradictory findings from (Kristanti & Mulya, 2021; Mulyadi et al., 2022; Ubwarin et al., 2021) suggest that highly profitable firms may experience shorter audit delays due to their ability to allocate more resources to audit preparedness and compliance processes. The divergence in results may stem from differences in regulatory environments, sample characteristics, and auditor specialization, highlighting the need for further investigation into how firm-specific governance practices and audit quality interact with profitability to influence audit delay.

These findings provide important implications for regulators, auditors, and corporate governance bodies. For regulators, ensuring that strict financial reporting deadlines and compliance

frameworks apply uniformly across firms may reduce audit delays regardless of profitability levels. For auditors, adopting enhanced risk-based audit methodologies can help optimize audit timelines, particularly in firms with complex financial structures. Lastly, corporate management should strengthen internal audit functions and early engagement with auditors to streamline the audit process, especially in industries with high financial disclosure requirements.

4.6. The Effect of Leverage on Audit Delay with Company Size as a Moderating Variable

The hypothesis test results indicate that firm size significantly weakens the positive relationship between leverage and audit delay, as reflected in a regression coefficient of -3.214 and a significance value of 0.008 ($p < 0.05$). These findings suggest that larger firms experience shorter audit delays despite high leverage levels, likely due to stronger internal control mechanisms, greater financial oversight, and structured audit preparedness strategies. This supports the argument that firm size plays a mitigating role in audit delays, reducing the risks associated with high debt levels and the need for extensive external auditor scrutiny.

From an agency theory perspective, high leverage increases agency costs, as creditors impose stricter monitoring and financial disclosure requirements to mitigate default risk (Jensen & Meckling, 1976). In smaller firms with weaker corporate governance mechanisms, these risks often lead to prolonged audits, as external auditors conduct more extensive procedures to validate financial stability. However, from a risk management theory perspective, larger firms tend to implement advanced risk mitigation strategies, such as internal audit committees, centralized financial reporting, and automated risk assessment tools, enabling them to manage debt obligations efficiently and reduce audit complexity.

A possible explanation for this finding is that larger firms leverage technology-driven audit processes to minimize delays. Many large firms implement Enterprise Resource Planning (ERP) systems, real-time data monitoring, and AI-driven audit analytics, which enhance financial transparency and facilitate seamless auditor access to critical financial data. This reduces the need for extensive manual verification procedures, allowing auditors to complete audits more efficiently (DeFond et al., 2011). Additionally, large firms often engage with Big Four audit firms, which employ structured audit methodologies and industry-specific expertise, further contributing to shorter audit durations.

These findings align with prior studies found that firm size is critical in reducing audit delays in highly leveraged firms (Abdillah et

al., 2019; Chalu, 2021; Lubis, 2022; Marcelino & Mulyani, 2021). However, the results contradict studies that argue firm size does not significantly influence audit delay in leveraged firms, particularly in cases where external auditors impose uniform risk assessment procedures across firms of varying sizes (Hassan, 2016; Khan et al., 2023). This discrepancy underscores the importance of considering industry-specific factors, regulatory environments, and auditor-client relationships when analyzing the moderating effect of firm size on audit timeliness.

4.7. The Influence of Audior Opinion on Audit Delay with Company Size as a Moderating Variable

The hypothesis test results indicate that company size does not moderate the relationship between auditor opinion and audit delay, as evidenced by a regression coefficient of 0.630 and a significance value of 0.059 ($p > 0.05$). These findings suggest that regardless of firm size, the audit opinion process follows standardized professional guidelines, ensuring that financial reporting quality and compliance, rather than company characteristics, dictate audit timeliness. This challenges the expectation that larger firms benefit from size-related advantages, such as enhanced internal controls or faster auditor access to financial records.

From an agency theory perspective, auditors function as independent monitors to mitigate information asymmetry between managers and shareholders (Jensen & Meckling, 1976). While larger firms generally have stronger governance mechanisms and internal audit functions, these factors do not influence how audit opinions impact audit timeliness. This finding is further supported by audit quality theory, which suggests that audit outcomes are primarily driven by financial reporting integrity rather than firm size (DeAngelo, 1981). In this context, the complexity of financial misstatements and the need for additional audit evidence—rather than firm size—are more significant contributors to audit delay.

One possible explanation for this finding is that audit delays associated with non-unqualified opinions stem from the complexity of financial misstatements and extended review procedures rather than firm size. When an auditor issues a qualified, adverse, or disclaimer opinion, the audit process often involves additional scrutiny from regulators, extended discussions with management, and potential restatements of financial reports. In industries with stringent financial reporting regulations, such as banking and manufacturing, these delays may be exacerbated by mandatory compliance reviews and additional disclosure requirements. This suggests that audit complexity, financial reporting irregularities, and

external regulatory pressures dominate audit delay more than company size alone.

These findings align with prior studies found that firm size does not significantly alter the relationship between auditor opinion and audit delay (Adela & Badera, 2022; Bahtiar et al., 2021; Chung et al., 2019; Su'un et al., 2020). However, these results contradict studies suggesting that larger firms experience shorter audit delays due to their ability to engage top-tier audit firms and leverage advanced auditing technologies (DeFond et al., 2011). This inconsistency highlights the need for further research into the role of industry-specific regulatory frameworks, audit firm specialization, and financial complexity in determining audit timeliness.

4.8. The Effect of Profitability on Audit Delay with Company Size as a Moderating Variable

The hypothesis test results indicate that company size does not moderate the relationship between profitability and audit delay, as evidenced by a regression coefficient of -2.167 and a significance value of 0.109 ($p > 0.05$). These findings suggest that the timeliness of financial reporting is independent of a firm's profitability level, regardless of size. While more significant, more profitable firms are generally expected to experience shorter audit delays due to their superior financial controls and audit preparedness, the results indicate that audit procedures remain standardized across firms as auditors adhere to structured methodologies and regulatory guidelines. This suggests that firm size does not amplify the expected effect of profitability on audit timeliness.

From an agency theory perspective, high profitability could incentivize managers to expedite financial reporting to signal strong performance to investors (Jensen & Meckling, 1976). However, the findings suggest that firm size does not amplify this effect, implying that auditor independence, standardized audit procedures, and regulatory enforcement outweigh managerial incentives. This finding is further supported by audit quality theory, which argues that audit outcomes and timeliness are primarily driven by financial reporting integrity and risk assessment rather than firm size or profitability (DeAngelo, 1981). In this context, audit risk factors such as financial misstatements and complex transactions dominate audit delays more than firm size alone.

5. Conclusion

This study examines the determinants of audit delay in the mining sector, focusing on leverage, business complexity, auditor opinion, and profitability while assessing the moderating role of

company size. Based on an analysis of 200 mining sector companies listed on the Indonesia Stock Exchange (BEI) from 2018 to 2022, the findings reveal that leverage significantly affects audit delay, suggesting that highly leveraged firms require more extensive audit procedures due to financial risk and regulatory scrutiny. Conversely, auditor opinion negatively influences audit delay, indicating that firms receiving an unqualified opinion complete audits more promptly. However, business complexity and profitability do not significantly impact audit delay, implying that audit procedures remain standardized across firms regardless of operational complexity or financial performance. Additionally, company size moderates the relationship between leverage and audit delay, meaning larger firms mitigate leverage-related audit delays through stronger governance and financial management. However, firm size does not moderate the relationship between auditor opinion, profitability, and audit delay, suggesting that audit procedures remain consistent across different firm sizes.

This research extends agency theory by demonstrating that firm size helps reduce agency costs associated with high leverage, allowing firms to manage audit risks more effectively. Additionally, the study reinforces audit quality theory, showing that audit timeliness is primarily driven by risk assessment and regulatory compliance rather than firm characteristics. These findings contribute to the literature on financial reporting timeliness and audit efficiency, particularly in emerging markets where audit delays are common.

From a practical perspective, the results highlight the need for robust internal controls, transparent financial reporting, and proactive auditor engagement to minimize audit delays, particularly for firms with high leverage. Regulators should enhance compliance frameworks and strengthen audit enforcement, ensuring firms meet financial reporting deadlines. Auditors should adopt risk-based auditing and advanced analytics to streamline audit procedures, especially in industries with complex financial structures.

Despite its contributions, this study has limitations. The R^2 value of 0.244 (24.4%) suggests that other unexamined factors influence audit delay while focusing on mining sector companies limits generalizability. Future research should explore additional moderating variables (e.g., corporate governance quality, audit firm specialization), extend the study to other industries, and conduct cross-country comparisons to better understand how institutional factors impact audit timeliness.

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