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## REGULATORY OVERSIGHT, FIRM CHARACTERISTICS, AND AUDIT QUALITY: EVIDENCE FROM INDONESIA'S POST PANDEMIC ENERGY SECTOR



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### Abstract

Regulatory transformation and increasing reporting complexity in Indonesia's post pandemic energy sector highlight the need for a clearer understanding of the factors that influence audit quality. Previous studies report inconsistent findings regarding the effects of audit tenure, audit rotation, firm size, and the audit committee's effectiveness, raising the question of whether auditor characteristics or client characteristics play a more dominant role. This study aims to examine the effects of audit tenure, audit rotation, and firm size on audit quality and to evaluate whether the audit committee moderates these relationships in energy companies listed on the Indonesia Stock Exchange. A quantitative approach was employed using purposive sampling, resulting in 46 sample firms observed from 2021 to 2024. Logistic regression was used to analyze audit quality proxied by audit opinion. The results show that audit tenure and audit rotation have no significant effect on audit quality, while firm size exhibits a strong and significant positive effect. Moreover, the audit committee does not moderate the relationship between the independent variables and audit quality. These findings indicate that in a strengthened regulatory environment characterized by intensified OJK oversight and consistent SPAP enforcement client characteristics, particularly firm size, play a more decisive role in determining audit quality than auditor characteristics. Theoretically, this study refines agency theory within mature regulatory settings, and practically, it offers guidance for auditor oversight policies, and corporate governance enhancement in the energy sector.

**Keywords:** Audit Quality, Audit Tenure, Audit Rotation, Firm Size, Audit Committee, Corporate Governance, Energy Sector

## INTRODUCTION

The rapid transformation of global financial markets and increasingly stringent transparency requirements have reinforced the importance of audit quality as a fundamental element in maintaining investor confidence and ensuring capital market integrity. High quality audits provide reasonable assurance that financial statements are free from material misstatements and help preserve public trust in the accounting profession (Ardiansyah et al., 2024). Within the framework of agency theory, auditors function as independent intermediaries who mitigate conflicts of interest between principals and agents arising from information asymmetry. Accordingly, audit quality reflects the effectiveness of the monitoring mechanism designed to reduce agency conflicts and enhance the credibility of financial reporting.

Despite the existence of regulatory mechanisms intended to safeguard auditor independence such as the Indonesian Minister of Finance Regulation No. 17/PMK.01/2008 governing audit engagement tenure several high profile cases demonstrate persistent weaknesses in audit practices. The audit failure at PT Garuda Indonesia Tbk involving the public accounting firm Tanubrata, Sutanto, Fahmi, Bambang & Rekan revealed improper revenue recognition practices that resulted in regulatory sanctions by the Financial Services Authority (OJK). Similarly, the case of PT Tiga Pilar Sejahtera Food Tbk, where Ernst & Young Indonesia uncovered substantial overstatements in multiple financial statement accounts, further illustrates vulnerabilities in the audit process. These phenomena raise fundamental questions regarding the determinants of audit quality, including audit tenure, audit rotation, firm size, and auditor characteristics (Akbar, 2017), all of which are closely related to auditor independence, competence, and the complexity of the audit engagement.

Prior research provides mixed evidence on these determinants. Some studies find that extended audit tenure enhances auditor competence through accumulated client knowledge (Pamungkas et al., 2022) whereas others argue that excessive tenure impairs independence and reduces professional skepticism. The mandatory audit rotation policy also yields inconsistent empirical results strengthening objectivity in certain contexts (Rahmadini & Fauzihardani, 2022) yet potentially reducing audit quality due to learning curve effects experienced by newly appointed auditors (Prasetya & Rozali, 2016). Firm size has similarly been identified as an important factor, with larger firms generally expected to possess stronger internal controls and greater incentives to maintain reporting (Widiastuti & Rofiqoh, 2024). However, inconsistencies across industries and time periods continue to obscure the true influence of these variables on audit quality. These inconsistent findings suggest that the effects of audit tenure, audit rotation, and firm size on audit quality may depend on contextual conditions, differences in research settings, and variations in audit quality measurement, thereby creating an unresolved empirical puzzle in the existing literature.

These inconsistent findings indicate that the effects of audit tenure, audit rotation, and firm size on audit quality may vary across organizational and governance contexts. Differences in audit committee oversight and effectiveness may influence how these audit characteristics operate in practice, thereby contributing to divergent empirical results. This suggests that incorporating the audit committee as a moderating variable may provide a more nuanced explanation of audit quality outcomes.

A notable limitation in Indonesian studies is the most prior research has focused on manufacturing and financial sectors, leaving the energy sector characterized by complex

asset structures, long term contractual arrangements, and elevated audit risk relatively underexplored. The capital intensive nature and high estimation uncertainty inherent in the energy sector are likely to intensify agency problems and increase the importance of effective audit mechanisms, particularly in the postpandemic environment. Another critical research gap concerns the limited examination of the audit committee's moderating role. Although the audit committee plays a strategic function in overseeing financial reporting and strengthening governance mechanisms, empirical investigation into its ability to moderate the relationship between audit characteristics such as audit tenure, audit rotation, and firm size, as these three factors can influence auditor independence, the auditor's understanding of the client, and the complexity of audit work and audit quality remains scarce in Indonesian settings. These audit characteristics directly influence auditor independence, the auditor's understanding of the client, and the complexity of audit work, suggesting that the audit committee may condition their impact on audit quality. Considering the audit committee's mandate to enhance oversight effectiveness, its potential to influence audit outcomes warrants deeper analysis. Accordingly, the audit committee is expected to moderate the relationships between audit tenure and audit quality, audit rotation and audit quality, as well as firm size and audit quality by influencing auditor independence, client-specific knowledge, and the complexity of audit oversight.

Addressing these gaps, this study focuses specifically on the post pandemic Indonesian energy sector and incorporates the audit committee as a moderating variable, an analytical dimension seldom applied in prior Indonesian audit research. The contributions of this study are threefold. Theoretically, this study adopts a contingency perspective by examining how the strength of the audit committee alters the effects of audit tenure, audit rotation, and firm size on audit quality. Empirically, it provides updated evidence from a high risk, capital intensive sector during a postpandemic recovery period, a context in which traditional relationships between audit characteristics and audit quality may differ from those observed in more stable industries. Practically, the findings are expected to inform regulators in refining policies related to auditor rotation and tenure, assist public accounting firms in enhancing internal quality controls and professional development, and guide companies in selecting auditors based on competence and industry specialization. Through these contributions, this study aims to strengthen audit quality frameworks in Indonesia and offer evidence based insights relevant to both regulators and practitioners.

## REVIEW OF LITERATURE

Agency Theory, introduced by Jensen and Meckling, explains that firms operate through contractual relationships between principals, who provide capital, and agents, who manage the firm on behalf of the principals (Mauliana & Laksito, 2021). Due to principals' limited access to internal information, information asymmetry arises and creates potential conflicts of interest between managers and owners. In such conditions, managers may engage in opportunistic behavior that does not align with shareholders' interests. To mitigate these agency conflicts, effective monitoring mechanisms are required. Within this framework, auditors serve as independent monitoring agents whose primary role is to reduce information asymmetry and enhance the credibility of financial reporting.

From an agency perspective, audit quality represents the effectiveness of the monitoring function performed by external auditors. High audit quality increases the

reliability of financial statements, constrains managerial opportunism, and reduces agency costs, thereby strengthening stakeholder confidence in reported financial information (Nguyen et al., 2024). Consequently, understanding the determinants of audit quality is essential for assessing how effectively agency conflicts are mitigated within firms.

Derived from agency theory concerns regarding auditor independence, competence, and monitoring effectiveness, audit tenure is commonly regarded as an important determinant of audit quality. Audit tenure refers to the length of time an auditor has consecutively examined the same client. Longer audit engagements may enhance audit quality because auditors accumulate deeper knowledge of the client's business processes, internal controls, and risk profile, enabling more effective audit planning and execution. However, excessively long auditor client relationships may also impair auditor independence due to increased familiarity, potentially weakening professional skepticism. Empirical evidence on the relationship between audit tenure and audit quality remains inconclusive. (Wahyu, 2020) finds no significant association, whereas (Aprilady et al., 2023) report a significant effect. These mixed findings suggest that the impact of audit tenure on audit quality may depend on contextual or governance related factors that influence auditor independence.

Audit rotation represents another agency based mechanism designed to preserve auditor objectivity and independence. Audit rotation refers to the replacement of the audit firm or the engagement partner to prevent excessive familiarity between auditors and clients. Through audit rotation, firms are expected to obtain fresh perspectives, strengthen professional skepticism, and maintain audit quality (Martani et al., 2021). Nevertheless, empirical findings regarding audit rotation are also inconsistent. (Paputungan & Kaluge, 2018) find no significant effect of audit rotation on audit quality, while (Akbar, 2017) documents a positive and significant relationship. These divergent results indicate that audit rotation alone may not uniformly enhance audit quality and that its effectiveness may depend on the strength of accompanying governance mechanisms.

Firm size reflects the scale and complexity of a company's operations and is commonly measured by total assets. Larger firms generally engage in more complex transactions, operate under stronger internal control systems, and attract greater public scrutiny, which may increase the demand for higher audit quality. From an agency perspective, larger firms face higher agency costs due to increased organizational complexity and therefore require more effective monitoring mechanisms to ensure credible financial reporting (Halim, 2018). However, empirical evidence regarding the relationship between firm size and audit quality remains mixed. (Putri & Pohan, 2022) find a positive and significant effect, whereas (Pamungkas et al., 2022) report no significant relationship. These findings suggest that firm size alone may be insufficient to explain variations in audit quality without considering the effectiveness of internal governance structures.

While Agency Theory emphasizes monitoring mechanisms to mitigate conflicts of interest, Signaling Theory provides complementary insight into how firms communicate credible information to external stakeholders. Signaling Theory, introduced by Swardjono, explains that managers use disclosures both mandatory and voluntary to convey information about firm performance and condition in order to reduce information asymmetry between agents and principals. Within this context, audit quality functions not only as a monitoring

outcome but also as a credible signal that enhances the reliability of financial information conveyed to the market.

For such signals to be credible, effective governance mechanisms are required to ensure that disclosed information accurately reflects the firm's true condition. In this regard, the audit committee plays a critical supervisory role by overseeing the financial reporting process, monitoring auditor performance, and ensuring the reliability of both mandatory and voluntary disclosures (Rahayu & Yendrawati, 2025). Established by the board of commissioners, the audit committee serves as a key internal governance mechanism that strengthens monitoring effectiveness and enhances the credibility of financial reporting.

Theoretically, a strong audit committee is expected to moderate the relationship between audit tenure and audit quality by constraining potential declines in auditor independence arising from prolonged audit engagements through rigorous oversight of the audit process. Similarly, the audit committee may enhance the effectiveness of audit rotation by ensuring a transparent, objective, and well managed auditor selection and transition process. Furthermore, in larger firms, the audit committee is expected to strengthen the positive effect of firm size on audit quality by overseeing the efficient use of organizational resources and managing the complexity of audit engagements.

However, empirical evidence regarding the moderating role of the audit committee remains inconclusive. While some studies document a significant moderating effect of the audit committee on the relationship between auditor related characteristics and audit quality (Tabsyir, 2025), other studies report insignificant moderating effects (Wahyu, 2020). These mixed findings highlight the need for further investigation into the contingent role of the audit committee across different institutional settings and industry contexts.

Integrating Agency Theory and Signaling Theory, this study conceptualizes audit quality as both an outcome of effective monitoring and a credible signal to external stakeholders. Accordingly, audit tenure, audit rotation, and firm size are examined as key determinants of audit quality derived from agency based monitoring concerns. The audit committee is positioned as an internal governance mechanism that strengthens monitoring effectiveness and enhances signal credibility and is therefore hypothesized to moderate the relationships between audit tenure, audit rotation, firm size, and audit quality. Based on this integrated theoretical framework, the following hypotheses are developed.

## **RESEARCH METHOD**

This study employs a quantitative research approach with a hypothesis testing design to examine the effect of audit tenure, audit rotation, and firm size on audit quality, with the audit committee serving as a moderating variable. The research model is designed to assess both the direct influence of audit related characteristics on audit quality and the contingent role of internal governance mechanisms in shaping these relationships. A quantitative approach is appropriate because it enables objective measurement and statistical inference regarding causal associations among variables within a regulated audit environment.

The population of this study consists of all energy sector companies listed on the Indonesia Stock Exchange (IDX) during the period 2021 to 2024. The sample was selected using a non probability sampling technique with a purposive sampling approach, based on the following criteria:

**Table 1**  
**Research Sampling Criteria**

<b>Criteria</b>	<b>Amount</b>
Energy sector companies listed on the Indonesia Stock Exchange (IDX) during 2021 to 2024	91
Energy sector companies listed on the Indonesia Stock Exchange (IDX) but not providing complete data required for the purposes of this research.	(42)
Energy sector companies that did not publish financial statements, annual reports, or independent auditor's reports during the 2021 to 2024 period.	(3)
Research sampling	46

Based on these criteria, 46 firms were selected as the research sample and observed over four years, resulting in 184 firm observations (46 firms × 4 years). This sample size is considered adequate for binary logistic regression analysis in audit and corporate governance research. The focus on the energy sector is motivated by its capital intensive nature, complex contractual arrangements, and relatively high audit risk, particularly in the postpandemic period.

This study uses secondary data obtained from the annual reports and independent auditor reports of energy sector companies listed on the Indonesia Stock Exchange for the period 2021 to 2024. Data were collected using a documentation technique. All variables were operationalized using proxies that are widely adopted in prior audit and corporate governance literature to ensure transparency and comparability.

Audit quality (AQ), the dependent variable, is measured using the audit opinion issued by the external auditor. A value of 1 is assigned to firms receiving an unqualified opinion, while a value of 0 is assigned to firms receiving other types of audit opinions. Audit tenure (AT) is measured by the number of consecutive years an audit firm has audited the same client. Audit rotation (AR) refers specifically to public accounting firm (PAF) rotation, rather than audit partner rotation, and is measured using a dummy variable coded 1 if a change in PAF occurs in a given year and 0 otherwise. Firm size (FS) is measured using the natural logarithm of total assets, which reduces data skewness and enhances comparability across firms.

The audit committee (AC), as the moderating variable, is measured by the total number of audit committee members, including the chair and committee members. Committee size is employed as a structural proxy that reflects the audit committee's monitoring capacity and its ability to effectively oversee the financial reporting process and external audit function. A larger audit committee is generally associated with a greater distribution of oversight responsibilities, enhanced discussion quality, and increased monitoring intensity, particularly in firms with complex operations. In the context of emerging markets such as Indonesia, audit committee size is widely used as a baseline governance indicator due to the limited and inconsistent disclosure of qualitative attributes, such as member independence, financial expertise, and meeting frequency, across firms and periods. While qualitative dimensions may provide a more nuanced assessment of audit committee effectiveness, the use of committee size remains consistent with prior Indonesian governance studies and is considered an appropriate and reliable proxy given data availability

constraints. This measurement approach allows the study to capture the audit committee’s structural capacity to strengthen auditor oversight and condition the relationship between audit related characteristics and audit quality.

Data analysis was conducted using binary logistic regression with the assistance of SPSS Statistics (Effendi & Ulhaq, 2021). This technique is appropriate because the dependent variable, audit quality, is dichotomous in nature. Unlike linear regression, logistic regression does not require the assumption of normally distributed residuals or homoscedasticity, as it estimates the probability of an outcome using a logit function.

To examine the moderating effect of the audit committee, interaction terms were created between the audit committee variable and each independent variable, namely AT × AC, AR × AC, and FS × AC. These interaction terms were included in the regression model to test whether the audit committee conditions the relationship between audit tenure, audit rotation, firm size, and audit quality. This analytical approach ensures consistency between the theoretical framework, hypothesis development, and empirical testing.

## RESULTS AND DISCUSSION

**Table 2**  
**Results of Descriptive Statistical Tests**

<b>Descriptive Statistics</b>					
	<b>N</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Std. Deviation</b>
<b>Audit Tenure</b>	184	1.00	4.00	2.0652	<b>1.04859</b>
<b>Audit Rotation</b>	184	0.00	1.00	0.1739	<b>0.38007</b>
<b>Firm Size</b>	184	12.81982	29.16535	21.22437	<b>3.912784</b>
<b>Audit Committee</b>	184	2.00	6.00	3.0870	<b>0.51538</b>
<b>Audit Quality</b>	184	0.00	1.00	0.0815	<b>0.27438</b>
<b>Valid N (listwise)</b>	184				
<b>Results of Descriptive Statistics Frequency</b>					
	<b>Frequency</b>		<b>Percent</b>		
<b>Audit Rotation</b>	0	152	<b>83.6%</b>		
	1	32	<b>17.4%</b>		
	Total	184	<b>100%</b>		
<b>Audit Quality</b>	0	169	<b>91.8%</b>		
	1	15	<b>8.2%</b>		
	Total	184	<b>100%</b>		

Source: SPSS, 2025

Based on Table 2, the descriptive statistics provide a comprehensive overview of the key variables, highlighting both central tendencies and frequency distributions that underscore the structural characteristics of audit practices in Indonesia's post pandemic energy sector. Audit Tenure exhibits a minimum of 1,00, a maximum of 4,00, a mean of 2,0652, and a standard deviation of 1,04859. This average tenure of approximately two years reflects a balanced engagement period, allowing auditors to accumulate sufficient client specific knowledge for effective risk assessment while mitigating risks of over familiarity

that could erode independence. From an agency theory perspective, this moderate tenure aligns with optimal monitoring mechanisms, where auditors act as intermediaries to reduce information asymmetry without succumbing to prolonged relational biases. Empirically, this finding contrasts with earlier studies like (Wahyu, 2020), which reported longer tenures in other sectors, suggesting that heightened OJK oversight in the energy industry characterized by complex assets and regulatory scrutiny enforces more frequent resets in auditor client relationships. This contributes novel insights to financial economic development by illustrating how sector specific regulations can calibrate tenure to enhance capital market efficiency, reducing agency costs and fostering investor confidence in emerging economies like Indonesia.

Base on Table 2, audit rotation displays a minimum of 0,00, a maximum of 1,00, a mean of 0,1739, and a standard deviation of 0,38007. The frequency analysis further reveals that 152 observations (83.6%) involved no rotation (coded as 0), while only 32 (17.4%) experienced auditor changes (coded as 1), totaling 184 observations (100%). This low rotation rate indicates a predominance of continuity in auditor engagements, potentially driven by the high costs of transitioning in a sector with intricate long term contracts and asset valuations. Theoretically, signalling theory (Rahayu & Yendrawati, 2025) posits that infrequent rotation may signal stable governance to stakeholders, reducing perceived risks of audit disruptions. However, it also raises concerns about entrenched familiarity impairing objectivity. This empirical pattern diverges from (Paputungan & Kaluge, 2018), who found higher rotation in manufacturing, implying that energy firms prioritize auditor expertise over mandatory changes due to elevated audit risks. The novel contribution here lies in demonstrating how low rotation frequencies, in a regulated environment, can stabilize financial reporting quality, informing policy for economic development by advocating risk based rotation frameworks that minimize disruptions in strategic sectors, thereby optimizing resource allocation and supporting sustainable growth in Indonesia's energy economy.

Base on Table 2, firm size shows a minimum of 12,81982, a maximum of 29,16535, a mean of 21,22437, and a standard deviation of 3,912784. The mean reflects predominantly large scale entities, consistent with the energy sector's capital intensive nature. Larger firms, as per agency theory, face amplified stakeholder scrutiny, incentivizing robust internal controls and high quality audits to signal credibility (Putri & Pohan, 2022). This aligns with (Widiastuti & Rofiqoh, 2024), who noted positive size effects, but extends the discourse by emphasizing post pandemic resilience, where bigger firms leverage economies of scale to navigate regulatory complexities. This finding offers a fresh perspective on financial economic development, highlighting how firm size acts as a proxy for governance maturity, enabling policymakers to target interventions at smaller entities to bridge quality gaps and promote inclusive economic progress.

Base on Table 2, audit committee presents a minimum of 2,00, a maximum of 6,00, a mean of 3,0870, and a standard deviation of 0,51538. The average of three members suggests compact yet functional committees, fulfilling POJK mandates for oversight. Grounded in agency theory, effective committees mitigate conflicts by enhancing auditor independence (Tabsyir, 2025) though the modest size may limit depth in high risk audits. Contrasting (Wahyu, 2020), who found no moderating role, this distribution implies standardized effectiveness across firms and contributing to theory by showing regulatory homogenization reduces variability in governance impacts. For economic development, this

underscores the need for capacity building in committee expertise to amplify audit quality, fostering transparent markets, and attracting foreign investment.

Base on Table 2, audit quality ranges from a minimum of 0,00 to a maximum of 1,00, with a mean of 0,0815 and a standard deviation of 0,27438. The frequency distribution indicates 169 observations (91.8%) with unqualified opinions (coded as 0) and only 15 (8.2%) with modified opinions (coded as 1), totaling 184 (100%). This skewed prevalence of unqualified opinions signals high overall reporting integrity, potentially attributable to stringent SPAP enforcement post pandemic. Theoretically, this supports (Nguyen et al., 2024), where quality proxies reflect auditor diligence in detecting misstatements, but challenges (Prihandoko, 2020) by revealing sector specific stability. Empirically, the low modification rate lower than in (Akbar, 2017) highlights the energy sector's conservative practices amid volatility. This novel insight advances financial economic knowledge by evidencing how regulatory maturity shifts quality determinants toward client attributes, guiding policies for targeted oversight that enhances market integrity and drives economic resilience in developing nations.

**Table 3**  
**Classification Table**

	Observed	Predicted			
		Audit Quality		Percentage Correct	
		Unqualified	Qualified		
Step 1	Audit Quality	.00	169	0	100.0
	Overall Percentage	1.00	14	1	6.7
					92.4

Source: SPSS, 2025

Based on Table 3 above, the developed logistic regression model demonstrates a very high predictive accuracy, reaching 92.4% for the overall sample overall percentage. Although the overall accuracy is 92.4% and considered excellent, the low correct prediction rate for the modified opinion group only 6.7% is understandable given the highly imbalanced nature of the dependent variable, where modified opinions represent only about 8.15% of the sample. This is a common phenomenon in logistic regression with severely imbalanced outcome variables, where the model tends to perform much better in predicting the majority class. Nevertheless, the high overall classification accuracy indicates that the model remains reliable and performs effectively in classifying audit quality within the current research sample. This imbalance, per agency theory, reflects systemic quality improvements, contributing novelly to financial economics by highlighting the need for imbalance-adjusted models in policy evaluations for emerging markets.

**Table 4**  
**Results Testing of Logistic Regression**

Variable	B	Wald	Sig.	
Step 1	AT	-.069	.046	.830
	AR	.242	.095	.758
	FS	.000	7.660	.006
	AC	-1.319	1.729	.189
	AT*AC	.718	.778	.342

	AR*AC	-1.651	.931	.335
	FS*AC	.000	1.763	.184
	Constant	.767	-29.510	.381
Hosmer and Lemeshow's Goodness of Fit	Chi-square		7.299	.505
Overall Model Fit Test Results	2Log likelihood (Block Number = 0)			103.949
	-2Log likelihood (Block Number = 1)			92.738
Coefficient of Determination	Nagelkerke R Square			.137
Nagelkerke R Square				

Source: SPSS, 2025

Based on Table 4, the initial -2 Log Likelihood value (block number = 0) before the independent variables were entered is 103,949. The final -2 Log Likelihood value (block number = 1) decreased to 92,738 after the four independent variables were incorporated into the model. This reduction indicates that the logistic regression model becomes more precise in explaining the data, and the proposed model is consistent with the observed empirical data. This suggests that the independent variables as a whole provide a significant contribution to predicting the dependent variable, allowing the model to be utilized for further analysis. Theoretically, this fit reinforces agency theory's applicability in regulated settings, where variables like firm size dominate, contributing to economic policy by validating models for predicting audit outcomes in volatile sectors.

Base on Table 4, the Hosmer and Lemeshow test results indicate a Chi-Square value of 7,299 and a significance level Sig. of 0,505. This significance value is substantially higher than the 0,05 threshold, implying no significant difference between the model's predicted values and the actual observed data. Therefore, it can be concluded that the logistic regression model employed exhibits a good fit with the empirical data, rendering the model valid and reliable for predicting the dependent variable in this study. This robust fit extends prior work (Martani et al., 2021) by confirming model reliability in energy contexts, offering new contributions to financial economics through evidence based tools for governance assessment.

Base on Table 4, the Nagelkerke R Square value is 0,137. This figure indicates that the independent variables audit tenure, audit rotation, firm size, and audit committee collectively explain 13.7% of the variation in the dependent variable audit quality, proxied by modified audit opinion. The remaining 86.3% is explained by other factors outside the current model that were not included in this study. Although the Nagelkerke R Square value is relatively low to moderate, it remains acceptable in logistic regression studies involving organizational behavior and corporate governance variables, considering the large number of uncontrollable external factors that typically influence audit quality. Argumentatively, this partial explanation aligns with signalling theory, where unobserved factors like market pressures play roles, innovating on (Pamungkas et al., 2022) by quantifying sector specific variances, thus aiding economic development via refined predictive frameworks for regulatory reforms. Although earlier high profile audit failures in Indonesia exposed serious weaknesses in auditor independence and monitoring mechanisms, the present findings

indicate that the postpandemic intensification of regulatory oversight particularly enhanced supervision by the Financial Services Authority (OJK) and stricter enforcement of Public Accountant Professional Standards (SPAP) has substantially mitigated those risks within the listed energy sector.

Based on Table 4, the logistic regression analysis reveals that the audit tenure variable exhibits a coefficient of -0,069, a wald statistic of 0,046, and a significance level of 0,830 ( $p > 0,05$ ), indicating no significant effect on audit quality. This low Wald value underscores the minimal contribution of audit tenure to the model, suggesting that the advantages of accumulated client specific knowledge from prolonged engagements are counterbalanced by potential impairments to auditor independence, thereby rendering tenure duration inconsequential in influencing the issuance of modified audit opinions. This result aligns with previous studies emphasizing that stringent oversight by the Financial Services Authority (OJK) and the consistent implementation of Public Accountant Professional Standards (SPAP) effectively neutralize familiarity threats (Wahyu, 2020). Theoretically, this finding reinforces agency theory by demonstrating that the effectiveness of monitoring mechanisms depends not solely on engagement length but also on the strength of institutional regulations that serve as substitute governance controls. Empirically, it challenges (Aprilady et al., 2023), who found effects in other contexts, offering new contributions to economic development by advocating tenure flexibility in regulated sectors to reduce compliance costs and enhance market efficiency.

Base on Table 4, the audit rotation variable displays a coefficient of 0,242, a wald statistic of 0,095, and a significance value of 0,758 ( $p > 0,05$ ), signifying no significant impact on audit quality. The near zero wald statistic highlights the negligible predictive power of audit rotation, implying that anticipated gains in independence from new auditors are offset by transitional disruptions and learning curve challenges, particularly in the intricate energy sector. This result supports prior arguments that mandatory rotation in Indonesia has not yet achieved its intended effectiveness due to inadequate knowledge transfer mechanisms (Paputungan & Kaluge, 2018). From a theoretical standpoint, the finding suggests that auditor rotation does not automatically enhance objectivity unless it is accompanied by a well designed transitional framework. his extends (Akbar, 2017) by evidencing post pandemic shifts, contributing to financial economics through policy recommendations for hybrid rotation models that balance innovation and stability in strategic industries. Taken together, the non significant results for audit tenure, audit rotation, and their interactions with the audit committee suggest that auditor related mechanisms no longer serve as primary differentiators of audit quality in the postpandemic energy sector.

In contrast to the consistently non significant auditor centric variables and their interactions with the audit committee, a client specific characteristic emerges as the dominant and decisive predictor of audit quality in the postpandemic energy sector. Base on Table 4, in contrast to the auditor centric variables that fail to exhibit explanatory power, a client specific characteristic emerges as the dominant determinant of audit quality in the postpandemic energy sector, the firm size demonstrates a coefficient of 0,000, a wald statistic of 7,660, and a significance level of 0,006 ( $p < 0,01$ ), denoting a highly significant positive effect on audit quality, where larger firms are markedly less prone to receiving modified audit opinions. The elevated Wald value confirms firm size as the strongest predictor in the model, underscoring its dominant explanatory role. This finding aligns with

agency theory and prior empirical evidence suggesting that larger entities benefit from more robust internal control systems, greater financial and operational resources, and heightened scrutiny from investors and regulators, which collectively enhance audit outcomes (Putri & Pohan, 2022). In the context of a post pandemic and increasingly regulated environment, these results further indicate that regulatory maturity acts as a boundary condition that attenuates the effectiveness of traditional auditor related mechanisms, such as audit tenure and rotation, thereby shifting the primary driver of audit quality toward client governance capacity as proxied by firm size. This evidence advances the theoretical understanding of audit quality by demonstrating that client specific characteristics particularly firm size can dominate traditional auditor based determinants. Moreover, this study extends the empirical landscape of the energy sector by innovatively linking firm size to organizational resilience, thereby refining the findings of (Pamungkas et al., 2022) and providing policy relevant insights for size differentiated regulatory oversight aimed at promoting equitable and sustainable economic growth.

Base on Table 4, the moderating effect test reveals that all interaction terms involving the audit committee are insignificant. First, the interaction Audit Tenure  $\times$  Audit Committee interaction yields a wald statistic of 0,778 and a p-value of 0,342 ( $p > 0,05$ ), implying that audit committee size or activity neither amplifies nor attenuates tenure's effect on audit quality, failing to mitigate independence impairments or enhance knowledge benefits. This contrasts (Tabsyir, 2025) but aligns with (Wahyu, 2020), contributing novelly by showing regulatory standardization diminishes moderation, aiding financial development via streamlined governance guidelines.

Base on Table 4, similarly, the interaction the Audit Rotation  $\times$  Audit Committee interaction produces a wald statistic of 0,931 and a p-value of 0,335 ( $p > 0,05$ ), indicating no moderating role in addressing rotation-induced disruptions or capitalizing on independence gains. This extends (Rahmadini & Fauzihardani, 2022) offering insights for economic policy on integrated committee rotation strategies.

Base on Table 4, interaction Firm Size  $\times$  Audit Committee interaction shows a wald statistic of 1,763 and a p-value of 0,184 ( $p > 0,05$ ), signifying that the audit committee's effectiveness in improving audit quality does not differ significantly between large and small firms, its oversight role has become uniformly effective across firm sizes in Indonesia's energy sector. Taken together, these results suggest that the audit committee's function has reached a relatively standardized and evenly distributed level of effectiveness due to strengthened regulations (POJK and SPAP), and therefore no longer serves as a differentiating moderating variable in determining audit quality across companies. This novel uniformity refines signalling theory, contributing to financial economics by advocating uniform committee standards to enhance market wide transparency.

Base on Table 4, By contrast, audit tenure p-value 0,830 and audit rotation p-value 0,758 show no significant influence on audit quality. Moreover, all three interaction terms with the audit committee (AT $\times$ AC, AR $\times$ AC, FS $\times$ AC) are insignificant  $> 0,05$ . These non significant results represent a novel contribution when compared to earlier Indonesian research, which frequently reported mixed or significant effects of tenure and rotation (Paputungan & Kaluge, 2018) and (Rahmadini & Fauzihardani, 2022). The absence of such effects in the post pandemic energy sector provides strong evidence that OJK's intensified oversight and uniform enforcement of Public Accountant Professional Standards (SPAP),

combined with POJK No. 55/2015 governance reforms, have successfully neutralized both familiarity threats from long tenure and learning curve costs from rotation. Similarly, the audit committee has ceased to function as a differentiating moderator, indicating that committee effectiveness has become standardized across listed energy firms.

While earlier high profile audit failures in Indonesia, such as PT Garuda Indonesia Tbk and PT Tiga Pilar Sejahtera Food Tbk, highlighted persistent weaknesses in auditor independence and monitoring mechanisms, the present findings suggest a meaningful structural shift in the institutional environment. While earlier high profile audit failures in Indonesia highlighted systemic weaknesses in auditor independence and monitoring mechanisms, the present findings indicate that these risks have largely shifted from structural to historical in nature. The post pandemic intensification of regulatory oversight particularly heightened supervision by the Financial Services Authority (OJK) and stricter enforcement of Public Accountant Professional Standards (SPAP) appears to have effectively mitigated agency problems traditionally associated with audit tenure and mandatory rotation within the listed energy sector.

These results provide three major contributions to science and national economic financial policy. Rather than merely presenting new empirical patterns, these findings extend agency theory by identifying regulatory maturity as a boundary condition that weakens, and in some cases neutralizes, traditional auditor based mechanisms related to tenure and rotation. First theoretically, this study refines agency theory by showing that in a mature and tightly regulated environment, client characteristics especially company size, can completely outweigh traditional agency problems arising from the auditor and client relationship. Second, empirically by focusing on the energy sector a high risk industry that has rarely been studied and using the most recent post pandemic data, this research updates and in some cases overturns the conclusions of earlier studies conducted in manufacturing or financial sectors.

Rather than merely demonstrating new empirical patterns, the findings of this study refine agency theory by identifying regulatory maturity as a boundary condition that weakens, and in some cases neutralizes, traditional agency mechanisms related to auditor tenure and rotation. In a tightly regulated and institutionally mature environment, client specific attributes particularly firm size become more salient determinants of audit quality than auditor client relational factors. This perspective advances prior audit literature by shifting the analytical focus from auditor behavior alone toward the interaction between regulatory strength and client governance capacity.

Third, and most importantly for policy the findings have direct implications for the development of Indonesia's financial and energy sectors. Because audit tenure and rotation no longer significantly affect quality, regulators no longer need to rely heavily on strict rotation rules. Resources currently used to monitor rotation compliance can be redirected to more productive areas: intensive supervision of small and medium sized energy companies that do not yet have strong natural governance, and the development of specialized training for auditors in complex energy accounting issues for example decommissioning costs, production sharing contracts, and hedging instruments. This risk based and size differentiated approach will reduce unnecessary compliance costs for large companies, improve the quality of financial reporting where it is most needed, and ultimately increase capital allocation efficiency and the global competitiveness of Indonesia's energy industry.

Despite its contributions, this study is subject to several limitations that should be acknowledged. First, the audit committee variable is measured solely by the number of committee members, which may not fully capture qualitative dimensions such as independence, financial expertise, or meeting frequency that potentially influence oversight effectiveness. Second, the Nagelkerke R Square value of 13.7% indicates that a substantial proportion of variation in audit quality remains unexplained, suggesting that other factors such as auditor industry specialization, audit fees, or ownership structure may also play an important role. Third, the study focuses exclusively on energy sector firms listed on the Indonesia Stock Exchange during the postpandemic period, which may limit the generalizability of the findings to other industries or institutional contexts. Finally, the use of a cross sectional panel design allows for the identification of associations rather than definitive causal relationships. Future research is therefore encouraged to employ richer governance proxies, broader sectoral coverage, and alternative methodological approaches to further validate and extend the present findings. Accordingly, the findings should be interpreted as associative rather than strictly causal relationships.

In summary, this study proves that in Indonesia's current regulatory environment, audit quality in the strategic energy sector is now driven primarily by the scale and governance strength of the client company, not by the length of the auditor relationship or mandatory rotation. This represents a significant evolution of audit quality dynamics in Indonesia and provides strong scientific evidence for modernizing audit oversight policies that are more efficient, targeted, and in line with the maturity of the Indonesian capital market.

## CONCLUSION

Based This study demonstrates that audit quality in Indonesia's energy sector is primarily shaped by client specific characteristics most notably firm size rather than auditor attributes such as audit tenure or audit rotation. Firm size shows a strong and significant positive association with audit quality, whereas tenure, rotation, and all moderating interactions with the audit committee are statistically insignificant. These findings indicate that Indonesia's strengthened regulatory environment, including enhanced OJK supervision and consistent SPAP enforcement, effectively neutralizes familiarity threats and transition related learning curve issues. Empirically, the results update and refine prior evidence by revealing that post pandemic audit dynamics in the energy industry have shifted with external governance mechanisms playing a far more dominant role than previously observed.

Theoretically, these results offer an important contribution by demonstrating that in a highly regulated environment institutional oversight can diminish the explanatory power of traditional auditor based determinants of audit quality. Thus, agency theory is refined by showing that client characteristics particularly firm scale may become the dominant drivers of audit quality when governance systems mature. Practically, the findings imply that regulatory reliance on strict auditor rotation rules may no longer be necessary. Oversight resources should instead prioritize monitoring small and medium sized energy companies and enhancing auditor training on complex industry specific accounting issues such as decommissioning costs, production sharing arrangements, and hedging activities. This approach is expected to improve audit effectiveness, reduce unnecessary compliance burdens, and strengthen the efficiency and competitiveness of Indonesia's energy sector.

Future studies are encouraged to incorporate more sophisticated audit quality proxies for example abnormal accruals, restatement likelihood, include broader governance variables such as board quality or audit committee expertise, and expand analyses to other high risk industries. Such directions will help provide a more comprehensive understanding of the evolving determinants of audit quality in Indonesia.

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