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Beyond stability: Mapping financial performance volatility and audit quality

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Abstract

This study examines the relationship between financial performance volatility and audit quality among non-financial firms listed on the Indonesia Stock Exchange from 2010 to 2024. Using 4,533 firm-year observations, the study examines how fluctuations in profitability, liquidity, and solvency impact the effectiveness of external audits, as measured by the absolute value of discretionary accruals. The empirical results show that volatility in all three financial dimensions is negatively associated with audit quality, indicating that firms with more unstable financial performance tend to experience lower-quality audits. Furthermore, cluster analysis reveals distinct volatility patterns that correspond to varying audit quality levels, confirming that financial stability is a significant determinant of audit risk. These findings extend Agency Theory and the Risk-Based Auditing Framework by introducing financial volatility as a key indicator of audit risk. The study provides implications for auditors, regulators, and policymakers to enhance audit planning and oversight in emerging market contexts.

Introduction

Audit quality has long been a central concern in the accounting literature, as it safeguards the credibility of financial reporting and protects stakeholder interests (DeAngelo, 1981; Francis, 2004; Watkins et al., 2004). However, in developing economies such as Indonesia, audit quality remains questionable due to limited auditor resources, high information asymmetry, weak regulatory enforcement, and dynamic corporate governance environments (Fan & Wong, 2005; Kurniawan et al., 2024). Prior studies have emphasised mainly the determinants of audit quality from the perspective of auditor characteristics, including distinctions between Big 4 and non–Big 4 auditors, audit tenure, and audit fees (Becker et al., 1998; Gul et al., 2009), as well as firm-level factors such as Size, leverage, and profitability. Yet, an emerging strand of literature suggests that volatility in firms' financial performance may represent an overlooked but critical risk factor shaping both managerial behavior and auditors' response (Abaidoo & Agyapong, 2021; Fornari & Mele, 2013; Habib et al., 2022).

Existing studies on volatility have largely centered on market-based risks, for example, earnings volatility and stock price volatility as determinants of cost of capital or investor perception, rather than their implications for audit quality. Only a few studies indirectly link performance volatility to auditor responses, focusing on audit fees or audit delay (Kim et al., 2003; Knechel, 2007). Consequently, there is little systematic evidence on whether and how instability in profitability, liquidity, or solvency affects auditors' ability to constrain earnings management. This

absence of empirical mapping underscores a significant void in the audit literature: while we know that volatile firms face higher audit risk, we do not yet understand whether such volatility translates into higher or lower audit quality in practice.

Theoritically, the relationship between financial performance volatility and audit quality can be explained through Agency Theory (Jensen & Meckling, 2019), which emphasises the conflict of interest and information asymmetry between managers and shareholders. When firms experience unstable financial conditions, managers face heightened pressure to maintain legitimacy in the eyes of investors, creditors, and regulators. Such pressure often incentivises managers to engage in earnings management practices aimed at portraying better performance than what is actually achieved (Healy & Wahlen, 1999; Warfield et al., 1995). From the auditor's perspective, the Risk-Based Auditing Framework provides a complementary explanation by asserting that volatility in profitability, liquidity, and solvency represents an increased risk of material misstatement (Dakka & Rostami, 2015; Knechel, 2007). Under these circumstances, auditors are required to expand the scope and intensify their audit procedures to identify and mitigate the likelihood of financial reporting manipulation effectively. Therefore, persistently high levels of earnings management in the presence of financial performance volatility signal a strong risk profile and indicate that auditors have failed to address client risk adequately. This situation ultimately reflects low audit quality and underscores the importance of understanding the dynamics of financial performance stability within the auditing process. Understanding this dynamic is crucial for refining audit risk assessment models and improving audit planning strategies.

To examine this relationship, the study employs a quantitative approach using secondary data from publicly listed firms in Indonesia over the period 2010–2024. Indonesia provides a unique institutional setting for testing this relationship. Beyond its classification as an emerging market, the country has undergone significant reforms in audit oversight, such as the establishment of the Financial Professional Supervisory Center (Pusat Pembinaan Profesi Keuangan, PPPK) and gradual alignment with International Standards on Auditing (ISA). Yet, enforcement remains inconsistent, with frequent audit opinion restatements and sanctions issued to both Big 4 and local audit firms. Coupled with pronounced firm-level performance volatility due to macroeconomic fluctuations and governance heterogeneity, Indonesia offers an ideal context to observe how auditors respond to instability in client performance within a developing regulatory environment (Claessens & Yafeh, 2013).

The study period captures a critical decade following the full adoption of IFRS in Indonesia, while also encompassing the economic disruptions caused by the COVID-19 pandemic. The independent variable, financial performance volatility, is measured by the three year rolling standard deviation of profitability indicators (ROA, ROE), liquidity indicators (current ratio, quick ratio), and solvency indicators (debt-to-assets ratio, debt-to-equity ratio). The dependent variable, audit quality, is proxied by the degree of earnings management, estimated using the absolute value of discretionary accruals derived from the modified Jones model (Jones, 1991), as modified by Kothari et al. (2005). A higher absolute value of discretionary accruals indicates lower audit quality, as it reflects auditors' inability to detect material misstatements (Dechow et al., 1995). After data cleaning and outlier elimination, the final sample comprises 4,533 firm-year observations, which serve as the basis for the empirical analysis.

By systematically linking performance volatility to audit quality, this research contributes to three areas. First, it fills a theoretical and empirical gap by situating financial volatility as an endogenous risk factor within the audit quality framework. Second, it introduces a cluster-based analytical approach that reveals nuanced differences in audit risk beyond conventional linear models. Third, it provides practical insights for auditors and regulators in emerging markets highlighting the need to integrate financial stability metrics into audit risk assessments and regulatory supervision. This study makes several important contributions to literature. Theoretically, it extends existing models of audit quality by introducing financial performance

volatility as an endogenous risk determinant that influences both managerial behavior and auditors' responses. This dynamic perspective challenges the static view of audit quality determinants and provides a more realistic understanding of how shifting financial conditions affect audit outcomes (Becker et al., 1998; Choi et al., 2010). Empirically, the study develops a comprehensive measure of volatility that integrates profitability, liquidity, and solvency dimensions, thereby capturing the holistic nature of financial stability rather than focusing on a single performance indicator. Methodologically, the application of cluster analysis offers a novel approach to identifying heterogeneous volatility profiles among firms, allowing the study to uncover non-linear relationships that traditional regression analyses might overlook. Contextually, situating the analysis within Indonesia's developing regulatory environment adds depth to the literature by revealing how audit risk materializes under conditions of institutional transition and enforcement asymmetry (Bermpei et al., 2022; Fornari & Mele, 2013). Finally, from a practical standpoint, the findings provide valuable insights for auditors and regulators by emphasizing the need to integrate volatility indicators into risk-based audit planning and oversight frameworks, ensuring more proactive detection of potential audit failures. Overall, this research repositions financial performance volatility from a peripheral indicator of business risk to a central explanatory construction in the audit quality domain. By systematically linking volatility, managerial incentives, and auditor responses, the study provides a more dynamic and context-sensitive understanding of audit quality determinants, enriching both theory and practice in auditing research.

The remainder of this paper is structured as follows. Section 2 reviews the relevant literature and develops the research hypotheses. Section 3 outlines the research design, including data sources, variable definitions, and analytical models. Section 4 presents the empirical results and discusses the main findings, while Section 5 provides additional analyses and robustness tests. The final section concludes the study by summarising the key results, highlighting theoretical and practical implications, and offering directions for future research.

Literature Review

Audit Quality and Earnings Management

Audit quality is broadly understood as the auditor's ability to provide assurance on the fairness of financial statements and to detect material misstatements (DeAngelo, 1981; Fan & Wong, 2005; Tepalagul & Lin, 2015). High-quality auditors are expected to reduce information asymmetry between management and corporate stakeholders by accurately assessing misstatement risk and implementing appropriate audit procedures (Cahan & Sun, 2015; Choi et al., 2010; Francis, 2004). In the literature, audit quality is often measured indirectly through the level of earnings management, as effective auditors should be able to constrain managers' discretionary accrual practices (Healy & Wahlen, 1999). A higher degree of earnings management indicates lower financial reporting quality, reflecting weak audit effectiveness (Dechow et al., 1995). Accordingly, earnings management, particularly the absolute value of discretionary accruals, has been widely used as a proxy for audit quality (Becker et al., 1998; Kothari et al., 2005), under the assumption that lower manipulation implies greater auditor effectiveness.

A considerable body of prior research has examined the determinants of audit quality from both the auditor's and the firm's perspectives. Auditor-related factors, such as differences between Big 4 and non–Big 4 auditors (Francis, 2004), audit tenure (Johnson et al., 2002), and audit fee variation (Gul et al., 2009), have been shown to influence the level of earnings management. On the firm side, Size, leverage, and profitability also affect audit quality, as these factors shape managers' incentives to manipulate financial statements (Kim et al., 2003; Warfield et al., 1995). However, most studies have focused on auditor characteristics or the level of financial performance. At the same time, little attention has been given to financial performance volatility as a crucial dimension that may heighten audit risk. Indeed, fluctuations in profitability, liquidity,

and solvency reflect greater uncertainty than average performance levels, potentially offering new insights into variations in audit quality. This study seeks to fill this gap by emphasising financial performance volatility as a risk determinant that may influence auditors' effectiveness in constraining earnings management.

Financial Performance Volatility as an Audit Risk

Financial performance volatility, reflected through fluctuations in profitability, liquidity, and solvency, serves as a key indicator of a firm's performance instability. Fluctuating profitability reflects uncertainty in the firm's ability to generate consistent earnings, while variations in liquidity indicate potential difficulties in meeting short-term obligations. Likewise, changes in solvency signal risks are associated with the firm's financing structure. Instability across these dimensions increases the complexity of a firm's financial condition, thereby elevating the risk of material misstatements in financial reports (Blitz & Vidojevic, 2017; Knechel, 2007; Koren & Tenreyro, 2007). Consequently, volatility not only captures operational dynamics but also functions as an audit risk signal that warrants greater auditor attention compared to assessments based solely on average performance levels.

In this context, firms exhibiting volatile performance are more likely to engage in earnings management to preserve legitimacy in the eyes of investors and creditors (Healy & Wahlen, 1999). Elevated uncertainty provides managers with more substantial incentives to exploit accounting flexibility in order to present a more stable performance than achieved. Here, the Risk-Based Auditing Framework becomes particularly relevant, as it emphasizes that auditors should tailor their audit procedures to the client's specific risk profile, including risks arising from financial performance volatility (Johnson et al., 2002; Knechel, 2007; Tepalagul & Lin, 2015). Auditors are therefore expected to respond to high-volatility environments by expanding audit scope, deepening substantive testing, and strengthening control procedures. When earnings management persists despite clear risk signals, it indicates a weak auditor response and, consequently, lower audit quality. Hence, understanding financial performance volatility is essential for the practical application of risk-based auditing and for ensuring the credibility of financial reporting outcomes.

Agency Theory and Earnings Management under Volatility Condition

Agency Theory emphasises the conflict of interest between managers and shareholders arising from divergent objectives and information asymmetry (Hussain et al., 2018; Jensen & Meckling, 2019). Under conditions of stable performance, monitoring mechanisms such as external audits can effectively constrain managerial opportunism because financial outcomes are predictable and easier to verify. However, when a firm experiences performance volatility, uncertainty about future cash flows increases and information asymmetry widens, reducing investors' ability to assess true performance and amplifying managerial discretion in financial reporting (Hussain et al., 2018). In such situations, managers face heightened incentives to manipulate earnings to maintain legitimacy, meet debt covenants, or avoid negative market reactions. Volatility therefore functions as a catalyst that intensifies agency conflicts, as it increases both the magnitude and opacity of potential earnings manipulation.

Within this framework, the auditor's monitoring role becomes even more critical, as higher performance volatility implies an elevated risk of material misstatement in financial reports. The Risk-Based Auditing Framework (RBAF) provides a foundation for auditors to respond proportionally to such risks by increasing the intensity and scope of audit procedures for firms exhibiting high volatility patterns (Cahan & Sun, 2015; Choi et al., 2010; Knechel, 2007). According to the RBAF, auditors design their procedures and allocate resources based on an assessment of the risk of material misstatement. Performance volatility directly feeds into this assessment by signaling instability in a firm's operations and financial fundamentals. For example, profitability

volatility may indicate unstable earnings streams and possible income smoothing; liquidity volatility may raise concerns about short-term solvency and going-concern risk; and leverage volatility may imply inconsistent financing strategies or hidden liabilities. Each form of volatility therefore elevates inherent risk and compels auditors to gather more persuasive evidence, expand sample sizes, and employ analytical procedures that can distinguish normal fluctuations from deliberate misstatements.

Conceptually, this study integrates Agency Theory and the RBAF through the mediating role of performance volatility. From an agency perspective, volatility magnifies managerial incentives to engage in earnings management (Jensen & Meckling, 2019). From an audit-risk perspective, volatility serves as an observable proxy for information risk that should prompt auditors to adjust their audit strategies accordingly. High quality audits are characterised by auditors' ability to translate volatility signals into proportionate audit responses, through expanded testing, heightened professional scepticism, and refined materiality thresholds (DeAngelo, 1981; Francis, 2004). Conversely, when volatility is high but discretionary accruals remain large, it indicates a breakdown in this alignment, suggesting that auditors have failed to adequately incorporate volatility into their risk assessments and procedures.

In this way, volatility becomes the operational bridge between Agency Theory and the Risk-Based Auditing Framework: it simultaneously increases the agency-driven incentives for earnings management and defines the audit risk environment that demands adaptive auditor behaviour. This integrated theoretical perspective provides a dynamic explanation of how external audits function as both a governance mechanism and a risk-management process under volatile financial conditions.

Hypothesis Development

A substantial body of empirical research has examined the determinants of audit quality, particularly regarding auditors' ability to constrain earnings management. From the auditor's perspective, evidence consistently shows that Big 4 auditors are associated with lower levels of earnings management compared to non–Big 4 auditors (Becker et al., 1998; Bermpei et al., 2022; Francis, 2004), underscoring their global reputation and superior resource capacity. Other auditor characteristics, such as audit tenure, have also been found to influence audit quality. Johnson et al. (2002) demonstrate that short-term auditor–client relationships may weaken audit effectiveness, whereas excessively long tenure could impair auditor independence. Moreover, audit fee variations have attracted scholarly attention; Gul et al. (2009) find that higher audit fees may enhance audit quality, although they may also create client dependence risks.

In addition to auditor-related factors, prior studies have explored firm-specific determinants of audit quality. Firm Size, for instance, is consistently associated with higher financial reporting quality, as larger firms face greater reputational pressures and public scrutiny (Bugeja, 2011; Warfield et al., 1995). Leverage is viewed as a driver of earnings management, as firms with higher debt ratios are under greater pressure from creditors (DeFond & Jiambalvo, 1994). Profitability also plays a role, with poorly performing firms being more likely to engage in opportunistic reporting to maintain legitimacy in the market (Kim et al., 2003). While these factors are important, most studies focus on static financial performance indicators, such as average ROA or leverage ratios, without considering the fluctuations and dynamics underlying these figures.

Meanwhile, the literature addressing volatility has predominantly focused on macroeconomic factors. For instance, studies on economic policy uncertainty (EPU) suggest that economic policy instability negatively affects financial reporting quality, as managers engage in earnings management to convey positive signals amid uncertainty (Bermpei et al., 2022; Kurniawan et al., 2024; Yung & Root, 2019). Other studies have shown that macroeconomic volatility, such as instability in GDP growth or fluctuations in capital markets, increases firm-level risk and ultimately impairs the quality of financial reporting (Bloom, 2014; Koren & Tenreyro, 2007). Although these

studies provide evidence that volatility plays a significant role in explaining managerial behaviour, their focus has remained mainly on external, macro-level conditions, rather than on firms' internal financial dynamics.

Accordingly, a significant gap remains in understanding the role of internal financial performance volatility as a determinant of audit quality. Fluctuations in profitability, liquidity, and solvency capture fundamental uncertainty faced by firms and can heighten the risk of material misstatement in financial reports (Houqe et al., 2017; Knechel, 2007; Osazefua Imhanzenobe, 2020). Empirical evidence on this relationship, however, remains scarce, particularly in developing economies such as Indonesia, where corporate governance systems are heterogeneous and regulatory oversight is relatively weak (Bhaumik et al., 2019; Fan & Wong, 2005). This study aims to fill this gap by introducing a novel perspective: mapping financial performance volatility patterns and examining their relationship with audit quality. By shifting the analytical focus from auditor characteristics or static performance levels to volatility as a source of audit risk, this research seeks to make theoretical, methodological, and practical contributions to the audit quality literature.

Based on the preceding discussion, financial performance volatility is expected to be an important determinant of audit quality. Agency Theory posits that managers have more substantial incentives to engage in earnings management when facing unstable financial conditions, while the Risk-Based Auditing Framework suggests that auditors should proportionally adjust audit procedures to reflect the heightened misstatement risk associated with volatility (Bugeja, 2011; Fan & Wong, 2005; Hussain et al., 2018; Man & Wong, 2013). In this regard, the volatility of profitability, liquidity, and solvency can be viewed as risk indicators that influence the effectiveness of auditors. If auditors fail to respond adequately to these risk signals, earnings management is likely to persist, reflecting lower audit quality. Accordingly, the study proposes the following hypotheses:

H1a: There is a relationship between profitability volatility and audit quality.
H1b: There is a relationship between liquidity volatility and audit quality.
H1c: There is a relationship between solvency volatility and audit quality.

Beyond testing the direct relationships between volatility and audit quality, this study also seeks to analyse patterns of financial performance volatility through a mapping approach. This method enables the identification of firm clusters based on their volatility profiles, allowing examination of whether audit quality differs across these groups. In other words, if financial volatility patterns can classify firms into distinct clusters with varying audit quality levels, this would provide additional evidence that volatility represents a meaningful dimension in assessing audit risk. Therefore, the study proposes the following hypothesis:

H_2: Distinct clusters of financial performance volatility are associated with varying levels of audit quality.
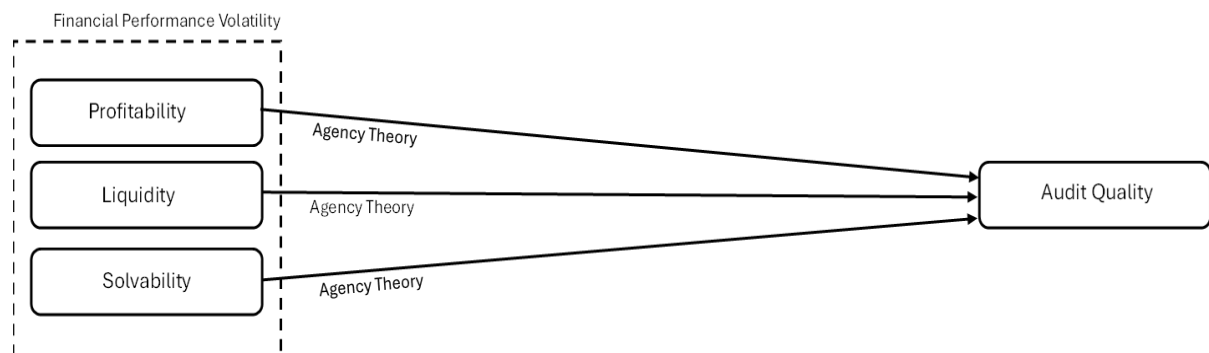

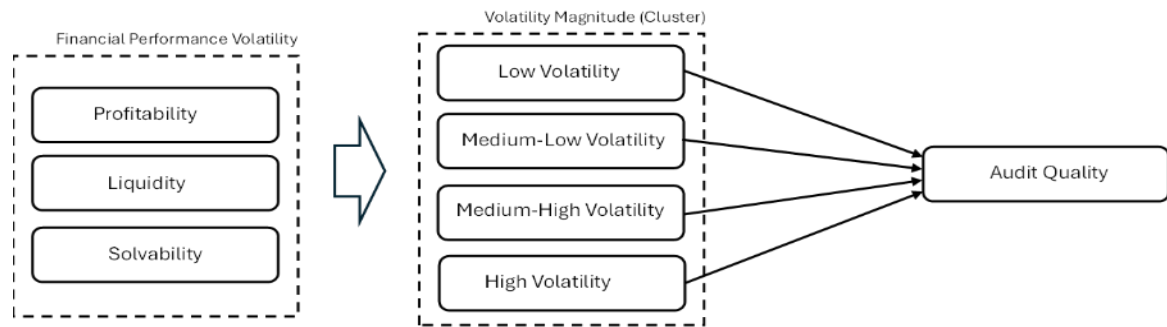**Figure 1.** Conceptual Framework H1a-H1c

Figure 2. Conceptual Framework H2

Research Method

Institutional Background

Indonesia represents one of the major emerging markets in Southeast Asia, characterised by an evolving corporate governance environment and a developing audit system. The diversity in regulatory oversight, the dominance of family ownership structures, and the limited capacity of auditor resources make Indonesia's audit environment distinct from that of developed economies (Fan & Wong, 2005; Kurniawan et al., 2024; Kurniawan & Nugroho, 2025). Following the full adoption of IFRS in 2012, publicly listed firms in Indonesia have been required to enhance financial reporting transparency and strengthen corporate governance practices.

Despite these regulatory advancements, substantial variations in audit quality persist across firms, primarily due to differences in business risk and operational complexity. Within this context, financial performance volatility serves as a crucial indicator influencing audit risk. When firms experience high fluctuations in profitability, liquidity, or solvency, auditors face greater uncertainty and a higher likelihood of material misstatements (Becker et al., 1998; Kurniawan et al., 2024; Kurniawan & Nugroho, 2025; Man & Wong, 2013). Therefore, Indonesia provides a relevant empirical setting for examining the relationship between financial performance volatility and audit quality within the framework of risk-based auditing.

Research Data and Sample

We use firms that listed on Indonesia Stock Exchange (IDX) over the period 2010–2024. Financial sector firms are excluded from the sample due to their distinct regulatory frameworks and financial reporting structures, which differ substantially from those of non-financial firms. Data were obtained from the Bureau Van Dijk (OSIRIS) and Refinitiv Eikon databases, which provide comprehensive firm-level financial information, as well as from annual reports to identify auditor type (Big 4 vs. non–Big 4). The sample was selected using a purposive sampling approach based on the following criteria: (1) Firms consistently published annual financial statements during the period 2010–2024; (2) Complete financial data were available to calculate volatility indicators for profitability, liquidity, and solvency; (3)Sufficient data were available to estimate the level of earnings management as a proxy for audit quality; and (4) Auditor characteristics were identifiable for each firm-year observation. After applying these criteria and removing outliers, the final sample comprises 4,533 firm-year observations, which serve as the basis for the empirical analysis.

Hypothesis Testing Model

To examine the relationship between financial performance volatility and audit quality, this study employs a Fixed Effects (FE) panel regression model. The FE estimator is selected because it effectively controls for time-invariant firm-specific characteristics, that could bias the estimated coefficients if unobserved. By focusing on within-firm variation over time, the FE model mitigates

omitted-variable bias arising from unobservable heterogeneity across firms. This approach is particularly suitable for longitudinal accounting data, where unobserved firm traits are likely correlated with explanatory variables such as profitability or leverage volatility. Furthermore, year and industry fixed effects are included to capture macroeconomic shocks and sector-specific influences that may affect audit quality across the sample period. Standard errors are clustered at the firm level to address serial correlation and heteroskedasticity.

$$AUDQ_{i,t} = \alpha_0 + \beta_1 VOLPROF_{i,t-1} + \delta FirmControls_{i,t} + YearFE + IndustryFE + \varepsilon_{i,t}$$
$$AUDQ_{i,t} = \alpha_0 + \beta_2 VOLLQD_{i,t-1} + \delta FirmControls_{i,t} + YearFE + IndustryFE + \varepsilon_{i,t}$$
$$AUDQ_{i,t} = \alpha_0 + \beta_3 VOLSOLV_{i,t-1} + \delta FirmControls_{i,t} + YearFE + IndustryFE + \varepsilon_{i,t}$$

In this model, audit quality (AQ) is measured as the negative value of the absolute discretionary accruals, multiplied by –1, so that higher values indicate higher audit quality. The key explanatory variables are VOLPROF, VOLLQD, and VOLSOLV, which capture volatility in profitability, liquidity, and solvency, respectively. Each volatility measure is calculated as the three-year rolling standard deviation of its underlying indicators: profitability volatility is derived from Return on Assets (ROA) and Return on Equity (ROE); liquidity volatility is based on the Current Ratio and Quick Ratio; and solvency volatility is obtained from the Debt-to-Assets and Debt-to-Equity ratios. The model also includes several control variables to account for firm-specific characteristics that may influence audit quality, namely firm size (SIZE), leverage (LEV), asset growth (GWH), and market-to-book ratio (MTB). The term α_i represents unobserved, time-invariant firm-specific effects, while YearFE and IndustryFE capture temporal and sectoral variations, respectively. Finally, $\varepsilon_{i,t}$ denotes the idiosyncratic error term.

For the second hypothesis, the study applies K-Means Cluster Analysis to classify firms based on the volatility patterns of the six financial performance indicators. This clustering technique identifies natural groupings of firms with similar volatility characteristics, such as "stable," "moderately volatile," and "highly volatile" profiles. After defining the clusters, differences in audit quality among these groups are tested using both parametric (ANOVA) and non-parametric (Kruskal–Wallis) methods. Finally, a supplementary Fixed Effects regression incorporates cluster membership as an explanatory variable to determine whether volatility-based classifications systematically correspond to variations in audit quality, as expressed in Equation (2):

$$AIDQ_{i,t} = \alpha_0 + \beta_1 i.Cluster_i + \delta FirmControls_{i,t} + YearFE + IndustryFE + \varepsilon_{i,t} \qquad (2)$$

This combined analytical design leverages both within-firm estimation and pattern-based classification to capture linear and structural variations in audit quality associated with financial performance volatility.

Calculation of Financial Performance

Financial performance volatility is calculated across three key dimensions, each representing a distinct aspect of a firm's operational stability. In this study, volatility is measured using the annual standard deviation (σ) of the relevant financial ratios over a five-year rolling window (t−4 to t), rather than the three-year window initially applied. This adjustment was made in response to reviewer feedback, to better capture both short-term fluctuations and longer-term structural or cyclical variations in firms' financial performance.

Profitability Volatility (VOLPROF) is measured as the standard deviation of Return on Assets (ROA) and Return on Equity (ROE); Liquidity Volatility (VOLLQD) is derived from the standard deviation of the Current Ratio (CR) and Quick Ratio (QR); and Solvency Volatility (VOLSOLV) is obtained from the standard deviation of the Debt-to-Assets (DA) and Debt-to-Equity (DE) ratios. A higher standard deviation indicates greater instability in financial performance, reflecting higher operational uncertainty. Within the framework of risk-based auditing, such volatility is assumed to increase the risk of material misstatement, thereby requiring

auditors to perform more extensive and in-depth audit procedures (Knechel, 2007). Using a five-year window provides a more stable and representative measure of volatility by smoothing out transitory shocks and firm-specific noise that may distort short-term estimates. This approach also enables the analysis to account for structural shifts in profitability, liquidity, and solvency, which are particularly relevant for firms in emerging markets where business cycles and macroeconomic shocks occur less frequently but with greater magnitude.

The choice of a five-year rolling period aligns with recent empirical studies that examine long-term financial variability as an indicator of firm risk and governance quality (Fornari & Mele, 2013; Habib et al., 2022). To ensure robustness, the results were re-estimated using both three-year and five-year measures, with consistent patterns observed in the relationship between financial performance volatility and audit quality. Hence, the five-year specification is retained as the primary measure in this study, as it offers a more comprehensive depiction of firms' stability dynamics over time.

Calculation of Audit Quality

Audit quality in this study is measured indirectly through the level of earnings management, following a two-stage accrual-based approach that integrates the Modified Jones model (Kothari et al., 2005) with the accrual quality decomposition framework of Balakrishnan et al. (2014) and Francis (2004). This integrated approach enables a more refined identification of the portion of accruals attributable to managerial discretion, representing the dimension of earnings management that auditors are expected to constrain, while controlling for the portion driven by firms' inherent economic conditions. Accordingly, lower levels of discretionary accruals, after accounting for inherent factors, indicate higher audit quality (Becker et al., 1998; DeFond & Jiambalvo, 1994). In the first stage, discretionary accruals (DA) are estimated using the Modified Jones model as follows:

$$\frac{TA_{i,t}}{ASSETS_{i,t-1}} = \beta 0 + \beta 1(1/ASSETS_{i,t-1}) + \beta 2 \frac{\Delta SALES_{i,t}}{ASSETS_{i,t-1}} + \beta 3 \frac{PPE_{i,t}}{ASSETS_{i,t-1}} + \theta 0 \tag{4}$$

$$\frac{\widehat{TA_{i,t}}}{ASSETS_{i,t-1}} = \widehat{\beta_0} + \widehat{\beta_1}(\frac{1}{ASSET})_{i,t-1} + \widehat{\beta_2} \frac{\Delta SALES_{i,t}}{ASSETS_{i,t-1}} + \widehat{\beta_3} \frac{PPE_{i,t}}{ASSETS_{i,t-1}} + \tag{5}$$

$$DAit = - |\widehat{TA_{i,t}} - TA_{i,t}| \tag{6}$$

where $TA_{i,t}$ denotes total accruals, calculated as the change in current assets minus cash, minus the change in current liabilities plus the current portion of long-term debt, and minus depreciation and amortisation, all scaled by average total assets. $PPE_{i,t}$ represents the gross value of property, plant, and equipment divided by average total assets, and $ROA_{i,t}$ is return on assets, measured as net income divided by total assets. The residuals ($\varepsilon_{i,t}$) from this regression capture discretionary accruals, i.e., deviations from the level of accruals expected under normal business conditions. In the second stage, to isolate the discretionary component of accrual quality from firm-level economic fundamentals, the estimated accrual quality is regressed on variables that represent the firm's inherent characteristics (Balakrishnan et al., 2014; Francis, 2004):

$$AQ_{i,t} = \beta_0 + \beta_1 SIZE_{i,t} + \beta_2 \Delta CFV_{i,t} + \beta_3 SALV_{i,t} + \beta_4 OC_{i,t} + \beta_5 NINC_{i,t} + \theta_0 \tag{5}$$

$$\widehat{AQ_{i,t}} = \widehat{\beta_0} + \widehat{\beta_1} SIZE_{i,t} + \widehat{\beta_2} CFV_{i,t} + \widehat{\beta_3} \Delta SALV_{i,t} + \widehat{\beta_4} OC_{i,t} + \widehat{\beta_5} NINC_{i,t} + \theta_0 \tag{6}$$

$$AQ_{i,t} = \widehat{AQ_{i,t}} - AQ_{i,t} \tag{7}$$

where SIZE denotes firm size, CFV is cash flow volatility, SALV is sales volatility, OC represents the operating cycle, and NINC is a dummy variable equal to 1 if the firm reports an operating loss. The residuals ($\mu_{i,t}$) from this model represent the discretionary component of accrual quality, interpreted as the degree of earnings management that cannot be explained by the firm's normal operating environment. The absolute value of these residuals ($|\theta_0|$) is used to capture the magnitude of earnings management irrespective of direction (income-increasing or income-decreasing). To align this measure with the concept of audit quality, the values are multiplied by –1 to construct the variable Audit Quality (AQ = $-|\theta_0|$), where higher AQ values

indicate lower discretionary behavior and therefore stronger audit oversight. This transformation allows higher scores to correspond to better audit quality, reflecting the auditor's effectiveness in constraining managerial discretion over financial reporting.

Compared with traditional single-stage accrual models (Jones, 1991; Kothari et al., 2005) his two-stage method provides a more appropriate and theoretically consistent proxy for audit quality. The first stage identifies total discretionary accruals associated with accounting choices, while the second stage removes the inherent, non-discretionary component attributable to firms' economic fundamentals. As a result, the remaining discretionary component reflects the portion of accruals most subject to auditor detection and intervention, isolating audit-relevant managerial behavior from normal operational factors. This refinement enhances construct validity by ensuring that the audit quality measure captures auditor performance rather than firm-specific accounting environments. Overall, this two-stage approach provides a multidimensional and risk-sensitive measure of audit quality that better reflects how effectively auditors mitigate agency-driven earnings management under varying financial performance volatility conditions. It aligns with both Agency Theory, which links managerial discretion to monitoring effectiveness, and the Risk-Based Auditing Framework, which views audit quality as the auditor's capacity to respond to elevated risks of misstatement.

Results and Discussion

Descriptive Statistics

Table 1 presents the descriptive statistics for the key variables used in the analysis, based on 3,616 firm-year observations. The mean value of audit quality (AUDQ) is –0.0630 with a standard deviation of 0.0624, indicating moderate variation in the magnitude of discretionary accruals across firms. Since the variable is constructed as the negative of absolute discretionary accruals, higher values represent higher audit quality. Regarding financial performance volatility, the results show considerable heterogeneity across firms. Profitability volatility, measured by the standard deviation of ROA (SolROA) and ROE (SolROE), has mean values of 0.0681 and 0.2384, respectively, suggesting that firms experience relatively modest but diverse profitability fluctuations. Liquidity volatility, proxied by the standard deviation of the current ratio (SolCR) and quick ratio (SolIQR), exhibits greater dispersion, with mean values of 3.000 and 0.6958, respectively. This wide range implies that firms differ substantially in their short-term liquidity stability, reflecting variations in working capital management. In terms of solvency volatility, the standard deviations of the debt-to-asset ratio (SolDEA) and debt-to-equity ratio (SolDEE) show mean values of 0.1086 and 0.9344, respectively, indicating higher variability in capital structure across firms. Such differences likely stem from heterogeneous financing policies and exposure to financial leverage risks.

Tabel 1. Descriptive Statistics

Variables	Obs	Mean	Std. dev.	Min	Max
SolROA	3,616	0.0681	0.2169	0.000753	5.090313
SolROE	3,616	0.2384	0.9156	0.000989	22.45472
SolCR	3,616	1.0000	3.3524	0.006804	72.00601
SolQR	3,616	0.6958	2.5689	0.004948	68.88079
SolDEA	3,616	0.1086	0.5753	0	22.47459
SolDEE	3,616	0.9344	4.0804	0	66.52591
AUDQ	3,616	-0.0630	0.0624	-0.35426	-1.44E-06
Size	3,616	21.985	1.5918	16.39253	26.86807
Lev	3,616	0.5702	1.7654	-0.04166	65.91277
GWH	3,616	0.1154	0.4595	-0.94875	14.8582
MTB	3,616	2.4120	5.2817	-50.29	133.184

Sources: The Authors' own works

For the control variables, the average firm size (Size) is 21.985, suggesting that the sample primarily consists of medium to large publicly listed firms. The mean leverage (Lev) of 0.5702 indicates a moderate level of indebtedness, while the mean asset growth (GWH) of 0.1154 reflects positive but varying growth patterns across firms. The market-to-book ratio (MTB) has an average value of 2.412, with substantial dispersion (standard deviation = 5.2817), signifying notable differences in firms' valuation and growth opportunities. Overall, these descriptive statistics reveal that Indonesian firms exhibit substantial variation in financial performance volatility across profitability, liquidity, and solvency dimensions. This variation provides a meaningful empirical basis to examine how differences in financial stability influence audit quality, consistent with the theoretical expectation of the Risk-Based Auditing Framework.

Primary Analysis: Volatility of Financial Performance and Audit Quality (H1a–H1c)

The regression analysis reveals that all three dimensions of financial performance volatilityare negatively and significantly associated with audit quality, thereby supporting Hypotheses H1a–H1c. For profitability volatility, both ROA and ROE volatility exhibit negative and statistically significant coefficients ($\beta = -0.0228$, $p < 0.05$; $\beta = -0.0006$, $p < 0.01$). This indicates that firms experiencing greater fluctuations in profitability tend to display lower audit quality. Such instability increases uncertainty and information asymmetry, intensifying managerial incentives to engage in earnings management to project an image of stable performance. From the auditors' standpoint, volatile profitability complicates the assessment of normal versus abnormal accrual behavior, thereby increasing the risk of undetected misstatement. This result aligns with Agency Theory, which posits that heightened financial uncertainty amplifies agency conflicts and opportunistic behavior, and with the Risk-Based Auditing Framework, which views profitability volatility as a key signal of elevated inherent risk.

For liquidity volatility, both the Current Ratio ($\beta = -0.0010$, $p < 0.05$) and Quick Ratio ($\beta = -0.0017$, $p < 0.01$) show significant negative relationships with audit quality. These results suggest that firms with unstable liquidity profiles are more prone to lower audit quality outcomes. Volatile liquidity levels often increase short-term financing pressures and create incentives for managers to manipulate accruals to maintain favorable liquidity positions. In such conditions, auditors face greater challenges in evaluating working capital accounts and assessing firms' short-term solvency, which may impair the reliability of their judgments. For solvency volatility, both Debt-to-Assets and Debt-to-Equity volatility show negative coefficients ($\beta = -0.0070$, $p < 0.05$; $\beta = -0.0005$, $p < 0.05$), indicating that instability in firms' leverage structures is associated with weaker audit quality. High solvency volatility increases financial distress risk and managerial incentives to manipulate accounting figures to comply with debt covenants or maintain creditworthiness. Inadequate auditor response to such heightened risk environments can result in insufficient testing of liabilities and misstatement detection failures, leading to reduced audit quality.

Collectively, these findings provide consistent evidence that greater financial performance volatility, across profitability, liquidity, and solvency dimensions, adversely affects audit quality. This outcome reinforces the theoretical integration of Agency Theory and the Risk-Based Auditing Framework. From an agency perspective, volatility heightens managerial discretion and opportunistic reporting behavior. From a risk-based auditing perspective, volatility increases the complexity of audit engagements, making it more difficult for auditors to accurately assess misstatement risk and design appropriate audit responses. The negative coefficients suggest that auditors in Indonesia may not always adjust audit scope and effort proportionately to volatility-related risks, resulting in diminished audit effectiveness. Overall, the empirical evidence underscores that financial stability plays a critical role in shaping audit quality. Firms with more stable profitability, liquidity, and solvency enable auditors to perform risk assessments more effectively and to produce higher-quality audits. Conversely, performance volatility undermines the

informational environment on which auditors rely, thereby weakening the effectiveness of audit procedures and the overall credibility of financial reporting.

Table 2. The Association Between Volatility of Financial Performance and Audit Quality

	Dependent variable: Audit Quality					
	Volatilitas Profitability		Volatilitas Liquidity		Volatilitas Liquidity	
	(1)	(2)	(3)	(4)	(5)	(6)
	ROA	ROE	CR	QR	DEA	DEE
SolROA	-0.0228**					
	-2.08					
SolROE		-0.0006***				
		-3.79				
SolCR			-0.0010**			
			-3.2			
SolQR				-0.0017***		
				-3.86		
SolDER					-0.0.0070**	
					-2.45	
SolDEE						-0.0005**
						-1.98
Size	0.0005	0.0004***	0.0013*	0.0013*	0.0004***	0.0012**
	3.71	3.91	1.65	1.72	3.77	3.45
Lev	0.0016**	0.0019***	-0.0030	0.0020	0.0019**	0.0066**
	2.15	2.56	0.55	0.37	2.48	2.49
GWH	-0.0007	-0.0006	0.0020	0.0014	-0.0002	-0.0017
	-0.67	-0.64	0.27	0.19	-0.27	-0.51
MTB	0.0001	0.00001	-0.0001	-0.0001	0.0001	0.0001
	0.66	0.85	-0.32	-0.28	0.78	0.01
Cons	-0.0127***	-0.0134***	-0.0397**	-0.0402**	-0.0129***	-0.386
	-5.03	-5.43	-2.21	-0.076923077	-5.11	-4.7
Year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
Obs	3,616	3,616	3,616	3,616	3,616	3,616
R-Square	0.0629	0.0651	0.0303	0.0316	0.0629	0.0486

Sources: The Authors' own works

Cluster Analysis: Mapping Financial Performance Volatility (H2)

To further examine whether differences in financial performance stability correspond to systematic variations in audit quality, this study employs a cluster-based analytical approach. While the earlier regression analysis (H1a–H1c) investigates the linear relationships between each volatility dimension and audit quality, the cluster analysis explores the combined and structural patterns of volatility across firms. This approach allows the identification of firm groups with similar volatility profiles, such as those exhibiting stable, moderately volatile, or highly volatile financial performance, and assesses whether audit quality differs significantly among these groups. This analytical extension directly tests Hypothesis H2, which posits that distinct clusters of financial performance volatility are associated with varying levels of audit quality. Conceptually, the mapping of volatility patterns provides a multidimensional perspective on audit risk. From the standpoint of Agency Theory, firms with high volatility across profitability, liquidity, and solvency dimensions are expected to exhibit greater agency conflicts and stronger incentives for earnings manipulation. In contrast, from the Risk-Based Auditing Framework, such volatility profiles signal elevated inherent and detection risks, requiring auditors to tailor their audit scope and procedures accordingly. If audit quality varies systematically across volatility clusters, it would indicate that

auditors' responses to risk are not uniform and that firm-specific volatility materially influences the effectiveness of external audits.

Table 3 presents the distribution of mean audit quality across quartiles of financial performance volatility. Firms in the low-volatility quartile exhibit the highest average audit quality (mean = − 0.0644, SD = 0.0635), whereas those in the medium–high-volatility quartile report the lowest average value (mean = − 0.0714, SD = 0.0784). The medium–low and high-volatility quartiles show intermediate mean values of − 0.0692 and − 0.0612, respectively. The overall sample mean of audit quality is − 0.0665 based on 3,616 firm-year observations. These descriptive results indicate observable variation in audit quality across different volatility categories, suggesting that firms with more unstable financial performance tend to display relatively lower average audit quality.

Tabel 3. Summary of Quartile: Audit Quality across Financial Volatility Quartiles

Volatility Quartile	Mean (AUDQ2)	Std. Deviation	Freq.	Percent	Cum.
Low Volatility	-0.0644	0.0635	904	25.02	25.02
Medium–Low Volatility	-0.0692	0.0776	904	24.99	50.01
Medium–High Volatility	-0.0714	0.0784	904	24.99	75.01
High Volatility	-0.0612	0.067	904	24.99	100
Total	-0.0665		3,616	100	

Sources: The Authors' own works

Table 4 presents the results of the Welch and Brown–Forsythe mean difference tests, which evaluate whether the average audit quality differs significantly across the four quartiles of financial performance volatility. The results indicate that all test statistics are statistically significant at conventional levels, with the Welch test ($W_0 = 7.0662$, $p = 0.0001$), the Brown–Forsythe test ($W_{50} = 4.0533$, $p = 0.0069$), and the Trimmed Mean test ($W_{10} = 4.5563$, $p = 0.0034$). These consistent significance levels across different test specifications confirm that the mean values of audit quality are not equal among the volatility quartiles. Because both the Welch and Brown–Forsythe tests are robust to heterogeneity of variances, these results provide reliable evidence that the variation in audit quality across groups is statistically meaningful even in the presence of unequal group dispersions. Taken together, the findings in Table 4 reinforce that firms with different degrees of financial performance volatility exhibit significantly different mean audit quality levels, validating the presence of heterogeneity identified in the descriptive quartile summary.

Tabel 4. Welch & Brown–Forsythe: Mean Difference Tests of Audit Quality across Financial Volatility Quartiles

Test	Statistic (W)	Prob > F
Welch (W_0)	7.0662	0.0001
Brown–Forsythe (W_{50})	4.0533	0.0069
Trimmed Mean (W_{10})	4.5563	0.0034

Sources: The Authors' own works

Table 5 presents the results of the Kruskal–Wallis test, which provides a non-parametric assessment of whether the distribution of audit quality differs significantly across the four financial volatility quartiles. The test statistic is significant at the 5% level ($\chi^2(3) = 9.314$, $p = 0.0254$), confirming that audit quality varies across the quartile groups. Because the Kruskal–Wallis test does not assume normality or equal variances, the result provides robust evidence that the differences in audit quality across volatility categories are statistically meaningful. This finding complements the results of the Welch and Brown–Forsythe tests, reinforcing that the variation in audit quality identified in the descriptive analysis is not random but systematically associated with firms' financial performance volatility levels.

Tabel 5. Kruskal–Wallis: Mean Difference Tests of Audit Quality across Financial Volatility Quartiles

Volatility Quartile	Obs	Rank Sum
Low Volatility	890	1,510,000
Medium–Low Volatility	889	1,620,000
Medium–High Volatility	889	1,580,000
High Volatility	889	1,630,000
Test Statistic	Value	Prob > χ²
Kruskal–Wallis $\chi^2(3)$	9.314	0.0254
$\chi^2(3)$ with ties	9.314	0.0254

Sources: The Authors' own works

Table 6 reports the results of the one-way Analysis of Variance (ANOVA) used to examine whether mean audit quality differs significantly across the four financial volatility quartiles. The between-group sum of squares (SS = 0.05653) compared to the within-group sum of squares (SS = 18.3741) indicates observable variation in mean audit quality among the quartiles. The corresponding F-statistic is statistically significant, suggesting that differences in audit quality exist across the groups. In addition, Bartlett's test for equality of variances yields a $\chi^2(3)$ value of 58.5734 with a *p*-value of 0.000, confirming that the variances across the quartiles are not equal. This result implies the presence of heteroscedasticity, supporting the use of variance-robust procedures such as Welch and Brown–Forsythe tests, which were reported earlier. Overall, the ANOVA results confirm that the mean levels of audit quality differ significantly across the financial volatility quartiles, consistent with the evidence obtained from both parametric and non-parametric mean-difference tests.

Tabel 6. Analysis of Variance: Mean Difference Tests of Audit Quality across Financial Volatility Quartiles

Source	SS	df
Between Groups	0.05653	3
Within Groups	18.3741	3,553
Total	18.43063	3,556
Test	χ²(df)	Prob > χ²
Bartlett's Test for Equal Variances	$\chi^2(3) = 58.5734$	0

Sources: The Authors' own works

Table 7 reports the regression results examining the effect of financial performance volatility clusters on audit quality. The results indicate that firms classified in the medium–high-volatility cluster exhibit significantly lower audit quality, as reflected by a negative and statistically significant coefficient (β = –0.0069, *p* < 0.05) across both model specifications. This finding suggests that firms with moderately high volatility in profitability, liquidity, and solvency experience weaker audit performance relative to firms in the low-volatility reference group. In contrast, the coefficients for the medium–low-volatility and high-volatility clusters are negative but statistically insignificant, indicating that the difference in audit quality between these clusters and the low-volatility group is not robust. Among the control variables, leverage (Lev) shows a positive and weakly significant relationship with audit quality in Model (2) (p < 0.10), while firm size (Size), asset growth (GWH), and market-to-book ratio (MTB) are not statistically significant. The constant term remains negative and significant in both models, consistent with the overall negative relationship between volatility and audit quality.

The explanatory power of the models, as reflected by the R^2 values (0.0034 and 0.0090), is modest but acceptable for firm-level panel data involving audit quality determinants. Overall, the results confirm that audit quality differs across volatility-based firm clusters, particularly among

firms exhibiting medium–high volatility. These findings support the notion that variations in financial performance stability are systematically associated with differences in audit quality outcomes.

Tabel 7. Reggression Result: The Effect of Financial Performance Volatility Clusters on Audit Quality

	Dependent variable: Audit Quality	
	(1)	(2)
Medium–Low Volatility	-0.0048	-0.0051
	-1.43	-1.53
Medium–High Volatility	-0.0069**	-0.0069**
	-2.04	-2.04
High Volatility	0.0029	0.0027
	0.86	0.85
Size	0.0001	-0.0001
	0.4	-0.18
Lev	0.0004	0.0004*
	0.69	1.67
GWH	-0.0008	-0.0010
	-0.32	-0.61
MTB	0.0001	0.0001
	0.58	0.82
Cons	-0.0717***	-0.0626***
	-4.60	-3.77
Year fixed effect	No	Yes
Industry fixed effect	No	Yes
Obs	3,616	3,616
R-Square	0.0034	0.0090

Sources: The Authors' own works

Discussion

The empirical findings from both the panel regression and cluster-based analyses consistently show that financial performance volatility is negatively associated with audit quality, supporting Hypotheses H1a–H1c and H2. Across all three volatility dimensions firms exhibiting greater instability tend to experience weaker audit quality, as evidenced by higher levels of discretionary accruals. This pattern remains consistent across multiple models and robustness tests, indicating that financial performance stability represents a fundamental determinant of audit effectiveness. From a theoretical perspective, these results extend the explanatory power of both Agency Theory and the Risk-Based Auditing Framework (RBAF). Under Agency Theory, volatility intensifies information asymmetry and exacerbates conflicts of interest between managers and shareholders. When profitability or liquidity fluctuates sharply, managers face stronger incentives to manipulate accounting outcomes to convey an impression of operational stability. The findings confirm that volatility functions as a catalyst for opportunistic earnings management, consistent with Healy and Wahlen (1999) and Warfield et al. (1995). At the same time, the RBAF posits that auditors should respond to such heightened misstatement risk by expanding audit scope and applying greater professional scepticism (Knechel, 2007). However, the persistent negative relationship observed here suggests that auditors in Indonesia may not consistently adjust their audit effort to reflect the higher inherent risk posed by volatility. In this sense, volatility reduces audit quality not only because it motivates managerial manipulation but also because it exposes auditors limited adaptive capacity in high-risk environments.

A closer examination of the regression results reveals that profitability volatility exerts the strongest and most consistent impact on audit quality, followed by liquidity and solvency volatility (Balakrishnan et al., 2014; Dakka & Rostami, 2015; Koren & Tenreyro, 2007). This pattern suggests that earnings instability is particularly problematic for auditors, as it blurs the boundary between genuine performance variation and accrual-based manipulation. Liquidity and solvency volatility also impair audit quality, but to a lesser extent, possibly because these elements can be tested more objectively through balance sheet verification and ratio analysis. Profitability, in contrast, depends heavily on management judgment and accrual estimation, which are inherently more difficult for auditors to validate. Hence, the results highlight that volatility influences audit quality through both behavioral and technical channels, by increasing managerial discretion and by complicating auditors' analytical procedures.

The findings also reveal meaningful differences across volatility clusters. Firms in the medium–high-volatility cluster exhibit significantly lower audit quality compared to those in the low-volatility group, while the high-volatility cluster shows no further deterioration (Dakka & Rostami, 2015; Koren & Tenreyro, 2007). This non-linear pattern indicates that audit quality deterioration may occur up to a certain volatility threshold, beyond which auditors recognize the elevated risk and respond with more extensive audit procedures or heightened professional caution (Choi et al., 2010; Gul et al., 2009). This threshold effect refines the theoretical linkage between volatility and audit quality by suggesting that auditors' responsiveness to volatility is conditional rather than proportional, that is, moderate instability may lead to underestimation of risk, whereas extreme instability may prompt stronger audit reactions.

When benchmarked against international evidence, the magnitude of the volatility–audit quality relationship in Indonesia appears stronger. In developed markets such as the United States or Western Europe, prior studies (Choi et al., 2010; DeFond & Jiambalvo, 1994) find that auditors are generally able to offset volatility-induced risks through more rigorous risk assessment and resource-intensive audit processes. Conversely, studies in developing markets, including India (Houqe et al., 2017) and China (Bermpei et al., 2022), report that financial volatility has a more pronounced negative impact on audit quality due to weaker institutional environments, lower auditor independence, and less consistent enforcement of audit standards. The results of this study align closely with these emerging-market patterns. The stronger coefficients observed in the Indonesian setting suggest that the institutional context amplifies the adverse effect of volatility, as limited regulatory enforcement and fee competition constrain auditors' ability to scale their procedures to client risk levels.

Integrating the regression and cluster-based evidence, the study provides a comprehensive understanding of how financial performance volatility functions as a systemic determinant of audit quality. Volatility operates through a dual mechanism: first, by amplifying agency-driven incentives for earnings manipulation; and second, by undermining auditors' capacity to accurately assess and respond to client risk. The combined evidence from H1a–H1c and H2 therefore supports a dynamic model of audit quality, wherein performance stability facilitates higher-quality audits, while volatility erodes audit effectiveness through both managerial and procedural pathways. In summary, the findings deepen theoretical understanding by demonstrating that volatility does not merely increase audit risk. Compared to prior international evidence, the Indonesian context magnifies these effects, reflecting the structural challenges of auditing in emerging markets. Thus, financial performance volatility should be recognized as a core, multidimensional construct in assessing audit quality, linking the behavioral dynamics of Agency Theory with the procedural insights of the Risk-Based Auditing Framework (Jensen & Meckling, 2019).

Conclusion

This study examines the relationship between financial performance volatility and audit quality among publicly listed firms in Indonesia over the period 2010–2024. Using both fixed-effects panel

regression and cluster-based analysis, the findings consistently reveal a negative association between volatility—measured through profitability, liquidity, and solvency—and audit quality, proxied by the discretionary component of accrual quality. Firms with greater instability in financial performance tend to exhibit weaker audit quality, confirming that financial volatility constitutes a meaningful dimension of audit risk. However, given the study's correlational design, the results should be interpreted as associative rather than causal. While volatility and audit quality move in tandem, the analysis does not establish direct causation or rule out unobserved firm characteristics that might influence both constructs.

This research contributes to the auditing literature in several important ways. First, it extends the application of Agency Theory and the Risk-Based Auditing Framework by demonstrating how financial performance volatility operates as a dual-channel mechanism that simultaneously increases managerial discretion and complicates auditors' risk assessments. Second, the study provides empirical evidence from an emerging market context, showing that the negative association between volatility and audit quality is more pronounced in Indonesia than in developed economies—reflecting differences in institutional enforcement and audit resource capacity. Third, the use of a two-stage measure of discretionary accrual quality and cluster-based analysis offers a more nuanced methodological approach that captures both linear and structural variations in audit quality across volatility profiles. Collectively, these contributions enrich the understanding of audit quality determinants beyond traditional auditor characteristics or static firm attributes.

Despite its insights, the study is subject to several limitations. The use of correlation-based regression analysis precludes strong causal inference; the relationships identified reflect associations that may be influenced by omitted variables such as corporate governance quality, audit fees, or internal control effectiveness. The measure of financial performance volatility, while improved using a five-year rolling window, still may not fully capture structural or macroeconomic shocks. Furthermore, audit quality is proxied through discretionary accruals, which, though widely used, cannot fully represent all dimensions of audit effectiveness such as detection risk, auditor judgment, or audit effort. Finally, while the sample period captures major economic events including the COVID-19 pandemic, the findings may not generalize to non-listed or smaller firms operating under different reporting environments.

Future studies could build upon these findings by adopting causal inference techniques—such as instrumental variable estimation or difference-in-differences models—to better isolate the direction of influence between volatility and audit quality. Incorporating auditor-level data (partner tenure, industry specialization, or workload pressure) would also provide deeper insights into how auditor characteristics interact with client volatility. Cross-country comparative research could further illuminate how institutional quality and enforcement mechanisms moderate this relationship. In addition, combining accrual-based and real earnings management proxies may yield a more comprehensive measure of financial reporting quality. Finally, qualitative approaches such as interviews or case studies with audit practitioners could explore how auditors perceive and respond to volatility in practice, enriching the behavioral dimension of the theoretical framework.

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