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A Multidimensional Assessment of Audit Quality and Its Impact on the Cost of Debt: Evidence from an Emerging Market

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ABSTRACT. This study examines the impact of audit quality on the cost of debt of listed firms in Vietnam within the context of an emerging economy. Grounded in agency theory and signaling theory, the paper adopts a multidimensional approach to measuring audit quality through four key components: auditor size (Big 4), auditor switching (CHANGET), audit opinion (QO), and audit timeliness (TIME), while also constructing a composite variable (AUDITQUALITY) to capture the overall effect. Using a sample of 4,960 firm-year observations and employing Pooled OLS, FEM, REM, and GLS estimation techniques, the empirical results indicate that audit quality has a negative and statistically significant effect on the cost of debt. Specifically, engagement of Big 4 audit firms and timely issuance of audit reports help reduce information asymmetry, thereby lowering borrowing costs. In contrast, modified audit opinions are perceived by creditors as high-risk signals, leading to higher costs of debt. The study provides important implications for corporate managers in auditor selection and for credit institutions in optimizing credit risk assessment processes.

1. INTRODUCTION

In corporate financial management, the cost of debt plays a pivotal role in determining firms' survival and sustainable development, as it directly affects capital structure and financing decisions. In an increasingly competitive capital market, optimizing the cost of external financing is not merely a matter of profitability but also reflects firms' ability to manage credit risk and the credibility of financial information provided to lenders [1], [2], [3]. By nature, the cost of debt represents a risk premium required by creditors to compensate for uncertainty and the potential opportunistic behavior of managers [3]. Consequently, identifying mechanisms that mitigate

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information asymmetry and reduce borrowing costs has become a central concern in contemporary accounting and finance research.

Audit quality is widely recognized as a crucial external governance mechanism that helps narrow the information gap between managers and capital providers [4]. According to agency theory, the separation of ownership and control gives rise to inherent conflicts of interest [3]. In this context, high-quality independent auditing functions as a filtering device that enhances the reliability of financial statements, constrains earnings management practices, and reduces information risk faced by creditors [5], [3]. When financial reports are certified by reputable audit firms, financial institutions gain stronger assurance in assessing firms' repayment capacity, thereby offering more favorable lending terms and lower interest rates [6], [5].

The relationship between audit quality and the cost of debt has been documented in numerous empirical studies, albeit with mixed findings. A traditional strand of literature grounded in information theory and insurance theory argues that high-quality auditors typically represented by Big 4 firms help lower perceived credit risk and thus reduce borrowing costs [7], [8], [5].

In the Vietnamese context, empirical evidence indicates that engaging Big 4 audit firms and maintaining high accruals quality significantly contribute to lowering firms' cost of capital, underscoring the role of audit quality in mitigating information risk and enhancing financial credibility [4], [3]. Similarly, evidence from the United Kingdom suggests that audit quality functions as a critical moderating mechanism through which firms with strong environmental, social, and governance (ESG) performance are able to access debt financing at more favorable costs [9].

Nevertheless, the effect of audit quality on the cost of debt is not always uniform or unequivocally beneficial across contexts. In Brazil's sugarcane industry, creditors appear to place greater emphasis on "soft information" derived from long-term banking relationships rather than on the reputation of Big 4 auditors, thereby attenuating the expected benefits of high audit quality [10]. In emerging markets characterized by relatively low litigation risk, the insurance role of auditing may be less pronounced, leading investors and creditors to focus primarily on its informational function. Furthermore, the provision of non-audit services can raise concerns about auditor independence, potentially heightening perceived information risk and increasing the cost of capital, while complex audit arrangements such as dual audits may even undermine audit quality if not effectively implemented [11].

One of the most significant limitations in the existing literature lies in the measurement of audit quality. Most prior studies rely on single proxies, such as auditor size (Big 4) or audit fees, to capture a concept that is inherently multidimensional [9]. Through a meta-analytical approach, audit quality is conceptualized as a multifaceted construct shaped simultaneously by auditor size, audit fees, and auditors' professional competence, highlighting its inherently complex nature

[12]. In addition, audit timeliness, auditor switching, and the type of audit opinion constitute salient informational signals that creditors rely upon when assessing firms' risk profiles [12].

Motivated by these research gaps, this study examines the impact of audit quality on the cost of debt of Vietnamese firms using a more comprehensive approach. Rather than relying on a single proxy, audit quality is measured through four key components: (1) auditor size (BIG4), reflecting the reputation and professional resources of the audit firm; (2) auditor switching (CHANGET), representing the stability of the audit relationship and the accumulation of client-specific knowledge; (3) audit opinion (QO), signaling the level of rigor and prudence in financial reporting; and (4) audit timeliness (TIME), measured by audit report lag and reflecting the efficiency and transparency of the audit process.

Beyond examining each component individually, the study constructs a composite variable, AUDITQUALITY, to capture the overall effect of audit quality. This approach helps mitigate statistical bias and aligns with the contemporary view that audit quality is a system of interrelated standards rather than an isolated attribute. The findings are expected to provide deeper insights into how audit quality shapes creditors' risk perceptions in an emerging economy such as Vietnam, where information transparency remains a significant challenge. The study not only contributes theoretically to accounting literature but also offers important practical implications for managers in selecting auditors and for policymakers in enhancing financial reporting standards to promote more efficient capital allocation in the economy.

2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

2.1. Audit Quality and Corporate Cost of Debt

According to agency theory, the relationship between firms and creditors inherently involves conflicts of interest arising from the separation of ownership and control, as well as information asymmetry regarding firms' financial conditions and operational risks [13]. In this context, the cost of debt is viewed as a risk premium required by creditors to compensate for uncertainty and the potential opportunistic behavior of managers [2]. External monitoring mechanisms, particularly independent auditing, play a crucial role in mitigating information asymmetry and reducing lenders' perceived credit risk.

High audit quality enhances the reliability of financial statements by detecting and constraining material misstatements and earnings management practices [14], [6]. When financial information is certified by competent and reputable auditors, creditors are better positioned to assess firms' repayment capacity, leading to lower monitoring costs and a willingness to accept lower interest rates. A substantial body of empirical evidence documents a negative relationship between audit quality and the cost of debt, suggesting that auditing functions as an important signal of corporate transparency and financial risk [1], [15].

2.2. Literature Review

The relationship between audit quality and the cost of capital including both the cost of debt and the cost of equity has been a central topic in accounting and finance literature. According to agency theory, high-quality independent auditing functions as an essential monitoring mechanism that mitigates conflicts of interest and reduces information asymmetry between managers and capital providers [16], [17], [5], [3]. A substantial body of empirical research worldwide has confirmed the beneficial role of audit quality in lowering the cost of debt (CoD). Bacha [5], examining listed firms in France, document that companies audited by Big 4 firms exhibit significantly lower borrowing costs, particularly when combined with effective corporate social responsibility (CSR) reporting. High-quality auditors are expected to perform both an informational role and an insurance role, thereby reducing creditors' perceived risk [5].

In Vietnam, empirical evidence indicates that accruals quality commonly employed as a proxy for post-audit information quality is negatively associated with the cost of capital, while firms engaging Big 4 auditors tend to exhibit superior accruals quality and lower financing costs [3]. Consistent findings are reported in the Indonesian context, where audit quality not only directly reduces the cost of equity but also attenuates the adverse effects of earnings management on investors' perceptions of risk [18], [19], [20].

Nevertheless, the influence of audit quality is not uniform across institutional and industrial settings. Evidence from Brazil's sugarcane industry suggests that, for private firms, the engagement of Big 4 auditors does not significantly reduce the cost of debt; instead, banks place greater weight on "soft information" derived from long-term lending relationships rather than on auditor reputation [10]. From a different perspective, findings from Germany indicate that the provision of non-audit services may raise concerns regarding auditor independence, thereby increasing perceived information risk and, ultimately, the cost of capital [21]. Similarly, evidence from Egypt suggests that complex audit arrangements, such as dual audits, may enhance audit conservatism but can also elevate borrowing costs due to increased uncertainty surrounding audit opinions [22], [23], [11].

From a methodological standpoint, recent studies have increasingly moved beyond reliance on single proxies toward adopting multidimensional approaches to measuring audit quality. Meta-analytical evidence confirms that audit fees and auditor size are key determinants that enhance perceived audit quality among financial statement users [12]. Further research conceptualizes audit quality as a complex construct encompassing input factors (such as auditor competence and experience), process characteristics, and output outcomes (including audit timeliness and audit opinion) [24]. In the Vietnamese context, recent studies have begun to employ composite audit quality indices to more comprehensively capture the nature of auditing activities, rather than relying solely on a Big 4 indicator [3].

In summary, although the bulk of empirical evidence supports the view that higher audit quality reduces the cost of debt by enhancing transparency, this relationship remains highly contingent upon country-specific institutional environments, industry characteristics, and measurement approaches [9], [12]. Consequently, a key research gap in Vietnam lies in undertaking a detailed examination of the effects of individual audit quality components such as audit timeliness and auditor stability within an integrated analytical framework, thereby offering a more comprehensive perspective for relevant stakeholders.

2.3. Hypothesis Development

Audit quality measured by auditor size

Prior studies suggest that the size and reputation of audit firms constitute an important indicator of audit quality, as large audit firms possess abundant resources, highly qualified professionals, advanced technologies, and stringent quality control systems, while also having strong incentives to protect their reputation and reduce litigation risk [14], [25]. Higher audit quality enhances the credibility and transparency of financial information and mitigates information asymmetry between firms and creditors. Extensive empirical evidence indicates that firms audited by Big 4 auditors tend to incur lower costs of debt, particularly in emerging markets, due to lower perceived credit risk and enhanced lender confidence [15], [26], [5], [3]. Accordingly, this study proposes the following hypothesis:

H1: *Audit quality measured by auditor size is negatively associated with firms' cost of debt.*

Audit quality measured by auditor switching.

The literature on auditor switching documents a close relationship between audit tenure and audit quality, albeit with two competing perspectives. Some studies argue that extended audit tenure may impair auditor independence due to close auditor–client relationships, thereby reducing audit quality [27]. Conversely, substantial empirical evidence supports the view that stability in the audit relationship enables auditors to accumulate client-specific knowledge, improve error detection efficiency, and enhance the reliability of financial reporting [28]. From an agency theory perspective, higher audit quality reduces information asymmetry and creditors' monitoring costs, thereby contributing to lower borrowing costs. Hence, the absence of auditor switching is expected to signal higher audit quality and to exert a negative effect on the cost of debt. The corresponding hypothesis is formulated as follows:

H2: *Audit quality measured by auditor switching is negatively associated with firms' cost of debt.*

Audit quality measured by audit opinion

Audit opinion represents the core element of the audit report, reflecting the auditor's conclusion regarding the fairness and reliability of financial statements in accordance with prevailing auditing standards. An unqualified opinion is generally viewed as a positive signal of financial reporting quality, whereas modified opinions imply the existence of material misstatements or

scope limitations. Under signaling theory, audit opinions play a critical role in reducing information asymmetry between firms and lenders and, consequently, in shaping credit risk assessments. An unqualified opinion strengthens creditors' confidence, reduces monitoring costs, and leads to lower interest rates, whereas modified opinions convey negative signals and may increase firms' cost of debt [15], [21], [11]. Accordingly, the following hypothesis is proposed:

H3: *Audit quality measured by audit opinion is negatively associated with firms' cost of debt.*

Audit quality measured by audit report lag

Audit report timeliness constitutes an important dimension of audit quality, reflecting the transparency and efficiency of the audit process as well as the reliability of disclosed financial information. Timely issuance of audit reports typically signals operational stability and the absence of significant financial reporting issues, whereas reporting delays may indicate latent risks and heighten creditors' concerns. From the perspectives of signaling theory and stakeholder theory, timely audit reporting reduces information asymmetry, enhances lenders' confidence, and ultimately lowers the cost of debt. Prior studies document that various audit quality attributes significantly affect audit report lag [29], [30]. Based on these arguments, this study advances the following hypothesis:

H4: *Audit quality measured by audit report lag is negatively associated with firms' cost of debt.*

Composite audit quality

Although each of the aforementioned components captures a distinct aspect of audit quality, recent studies emphasize that audit quality is a multidimensional construct that cannot be fully captured by a single proxy [7], [8], [12], [24]. Accordingly, this study constructs a composite audit quality variable based on auditor size, auditor switching, audit opinion, and audit report lag to more comprehensively reflect audit quality. Drawing on agency theory, signaling theory, and prior empirical evidence, the study proposes the following overarching hypothesis:

H5: *Composite audit quality is negatively associated with firms' cost of debt.*

3. RESEARCH METHODOLOGY

Based on a comprehensive review of prior studies and a synthesis of the foundational theories regarding the impact of audit quality on the cost of debt of firms worldwide and in Vietnam, the author employs the following formal research model:

Model 1:

$$COD_{it}=\beta_0+\beta_1 BIG4+\beta_2 CHANGET+\beta_3 QO+\beta_4 TIME+\delta_1 SIZE_{it}+\delta_2 CFO_{it}+\delta_3 LEV_{it}+\delta_4 ROA_{it}+\delta_5 PPE_{it}+\varepsilon_{it}$$

Model 2:

$$COD_{it}=\beta_0+\beta_1 AUDITQUALITY+\delta_1 SIZE_{it}+\delta_2 CFO_{it}+\delta_3 LEV_{it}+\delta_4 ROA_{it}+\delta_5 PPE_{it}+\varepsilon_{it}$$

The variables included in the model are specified in detail in Table 1.

The research dataset comprises a total of 4,960 firm-year observations of companies listed on the Vietnamese stock market over the period 2017–2024, distributed across three main trading platforms. Among these, the UPCoM market accounts for the largest proportion, with 2,458 firms, representing 49.55% of the total sample. The HOSE (Ho Chi Minh Stock Exchange) includes 1,477 firms, equivalent to 29.78%, while the HNX (Hanoi Stock Exchange) covers 1,025 firms, accounting for 20.67%. This distribution reflects substantial differences in scale across the exchanges and highlights the increasingly prominent role of the UPCoM market in attracting listed firms in Vietnam.

The estimation techniques employed include Pooled Ordinary Least Squares (OLS), Fixed Effects, and Random Effects models. The Hausman test is applied to select the most appropriate specification. In addition, standard errors are adjusted to correct for heteroskedasticity and autocorrelation, thereby ensuring the robustness and reliability of the statistical inferences.

Table 1: Summary of Variable Measurements in the Research Model

Variable name	Variable code	Variable type	Measurement	Expected effect
Cost of debt	COD	Dependent variable	Interest expense / Total liabilities	
Audit firm size	BIG4	Independent variable	1 = Auditor is a Big 4 firm; 0 = Auditor is non–Big 4	–
Auditor change	CHANGET	Independent variable	1 = No change in audit firm; 0 = Change in audit firm	–
Audit opinion	QO	Independent variable	1 = Unqualified (clean) opinion; 0 = non-unqualified opinion	–
Audit report lag	TIME	Independent variable	1 = Financial statements released within ≤ 90 days; 0 = Release period > 90 days	–
Composite audit quality	AUDIT QUALITY	Independent variable	Composite index constructed from audit quality components	–
Firm size	SIZE	Control variable	Natural logarithms of total assets	–
Operating cash flow	CFO	Control variable	Cash flow from operating activities / Total assets	–
Return on assets	ROA	Control variable	Net income / Total assets	–
Financial leverage	LEV	Control variable	Total liabilities / Total assets	+
Fixed asset investment	PPE	Control variable	Gross property, plant and equipment / Total assets	–

4. EMPIRICAL RESULTS

4.1. Descriptive Statistics

Based on the descriptive statistics (Table 2) of the sample comprising 4,960 observations, several important academic insights can be drawn regarding the cost of debt and audit quality of firms in Vietnam.

First, the cost of debt (COD) has a mean value of 0.069, indicating that Vietnamese firms face a relatively high cost of borrowing compared with firms in many developed markets. This reflects elevated credit risk and a substantial degree of information asymmetry. The standard deviation of 0.045, together with a maximum value of 0.369, points to considerable heterogeneity in borrowing conditions across firms, implying a potential role for risk-mitigating mechanisms, including high-quality independent auditing.

With respect to audit quality, only 23.2% of firms are audited by Big 4 audit firms (BIG4), reflecting the fact that the majority of listed firms in Vietnam continue to engage non–Big 4 auditors. The variable CHANGE has a mean value of 0.787, suggesting a relatively high frequency of auditor changes and implying unstable auditor–client relationships, which may increase information risk from the perspective of creditors. In addition, the proportion of firms receiving non-unmodified audit opinions (QO) is 81.7%, together with a high mean value of TIME (0.937), indicating that issues related to audit conservatism and audit timeliness remain fairly prevalent.

The control variables further show that firms in the sample exhibit high financial leverage (LEV = 0.591) and low profitability (ROA = 0.038), reinforcing the view that financial risk is a salient characteristic of the research context. Overall, the descriptive statistics provide preliminary evidence of substantial heterogeneity in audit quality, thereby offering a reasonable foundation for the subsequent empirical analysis of the effects of individual audit quality components on the cost of debt of Vietnamese firms.

Table 2. Descriptive Statistics

Variable	Obs	Mean	Std. dev.	Min	Max
COD	4,960	0.069	0.045	0	0.36933
BIG4	4,960	0.232	0.422	0	1
CHANGE	4,960	0.787	0.409	0	1
QO	4,960	0.817	0.387	0	1
TIME	4,960	0.937	0.243	0	1
SIZE	4,960	27.560	1.565	21.530	33.045
CFO	4,960	-0.033	0.270	-8.804	8.329
LEV	4,960	0.591	0.625	0.017	14.399
ROA	4,960	0.038	0.122	-6.105	1.034
PPE	4,960	0.260	0.232	0	0.98

4.2. Correlation Analysis

The correlation matrix provides important preliminary evidence on the relationship between audit quality and the cost of debt of firms in Vietnam. First, COD is negatively and statistically significantly correlated with BIG4 (–0.0538), indicating that firms audited by Big 4 audit firms tend to face lower costs of debt. This finding is consistent with the argument that high-quality audits mitigate information asymmetry and reduce perceived credit risk. In contrast, COD is positively correlated with CHANGE, TIME, and PPE, implying that auditor changes, audit report lag, and higher capital intensity may increase creditors perceived risk. Notably, AUDITQUALITY is negatively correlated with COD, albeit at a modest magnitude, suggesting that a multidimensional approach to measuring audit quality is appropriate. Overall, the correlation coefficients among the independent variables are generally not high, indicating that multicollinearity is unlikely to be a serious concern and that the regression model is empirically feasible.

4.3. Regression Results

The regression results (Table 4) indicate that the effects of individual audit quality components on the cost of debt of Vietnamese firms are heterogeneous, reflecting the multidimensional nature of audit quality. First, the BIG4 variable exhibits a negative coefficient that is highly statistically significant across all estimation methods (OLS, FEM, REM, and especially GLS). This finding suggests that firms audited by Big 4 audit firms incur lower costs of debt, reinforcing the role of auditor reputation, professional expertise, and the capacity of high-quality audits to mitigate information asymmetry. This result is consistent with DeAngelo [14] and prior empirical evidence in emerging market contexts.

Table 3: Correlation matrix results

Variable	COD	BIG4	CHANGET	QO	TIME	AUDIT QUALITY	SIZE	CFO	LEV	ROA	PPE
COD	1.0000										
BIG4	–0.0538*	1.0000									
CHANGET	0.0088	0.0460*	1.0000								
QO	0.0031	0.1689*	0.0540*	1.0000							
TIME	0.0092	0.0419*	0.1494*	0.0660*	1.0000						
AUDITQUALITY	–0.0188	0.6201*	0.5836*	0.5963*	0.4170*	1.0000					
SIZE	0.0681*	0.4209*	0.0260	0.0862*	–0.0624*	0.2479*	1.0000				
CFO	–0.0423*	–0.0082	0.0038	0.0391*	0.0058	0.0176	0.0538*	1.0000			
LEV	0.0473*	–0.0862*	0.0305*	–0.2097*	–0.0424*	–0.1386*	–0.1046*	–0.0459*	1.0000		
ROA	–0.1061*	0.1286*	0.0223	0.2003*	0.0891*	0.1952*	0.1700*	–0.1239*	–0.5573*	1.0000	
PPE	0.3467*	0.0423*	0.0309*	–0.0131	0.1125*	0.0634*	–0.0013	–0.1023*	–0.0335	0.0234	1.0000

$*p<0.05$

(Source: Data analysis from Stata 17.0)

Table 4: Regression Results of Audit Quality Components

Variable	VIF	OLS	FEM	REM	GLS
BIG4	1.29	–0.00477***	–0.00304**	–0.00477***	**–0.00592*** **
CHANGET	1.14	–0.00072	–0.00084	–0.00072	0.00010
QO	1.18	0.00040	0.00005	0.00040	**0.00241*** **
TIME	1.11	–0.00184*	–0.00184*	–0.00184*	–0.00069
SIZE	1.66	0.00211***	0.00236***	0.00211***	**0.00188*** **
CFO	1.20	–0.00098	–0.00068	–0.00098	**–0.00267** **
LEV	1.24	–0.00006	–0.00143	–0.00006	–0.00023
ROA	1.33	–0.00945***	–0.00664***	–0.00945***	**–0.0242*** **
PPE	1.25	0.0399***	0.0477***	0.0399***	**0.0325*** **
_cons		–0.0343***	–0.0427**	–0.0343***	–0.0287***
N		4960	4960	4960	4960
R-squared (R^2)		0.1441	0.1330		
Test F (FEM)		F (9,3948) =46.98 Prob > F = 0.0000			
Wald test (OLS/REM)		Wald chi2 (9) = 592.17 Prob > chi2 = 0.0000		Wald chi2(9) = 592.17 Prob > chi2 = 0.0000	Wald chi2(9) = 902.64 Prob > chi2 = 0.0000
Hausman test		Chi2(9) = 52.79 Prob > chi2 = 0.0000			
Modified Wald test		Chi2(1003) = 165288.83 Prob > chi2 = 0.0000			
Wooldridge test		F (1,731) = 113.249 Prob > F = 0.0000			

t statistics in brackets*p<0.1, **p<0.05, ***p<0.01

(Source: Data analysis from Stata 17.0)

In contrast, the CHANGET variable is not statistically significant in most specifications, indicating that auditor changes do not exert a clear effect on the cost of debt. This may reflect the Vietnamese context, where creditors place greater emphasis on auditor reputation than on the stability of audit tenure. For QO, the positive and statistically significant coefficient in the GLS model indicates that firms receiving non-unqualified audit opinions face higher borrowing costs, implying that creditors interpret such opinions as negative signals of financial risk and reporting quality. The TIME variable yields mixed results: although it shows a negative sign in some models, the effect is not robust, suggesting that audit report lag is not a strong signal for creditors in the setting studied. Accordingly, hypotheses H1 and H3 are supported.

Overall, the regression findings confirm that not all dimensions of audit quality play an equal role in shaping the cost of debt. Auditor reputation (BIG4) and audit opinion (QO) emerge as the most salient signals for creditors in Vietnam, highlighting the importance of adopting a component-based approach to measuring audit quality rather than relying on a single proxy.

In addition, diagnostic tests indicate a high degree of model robustness. Variance Inflation Factor (VIF) values remain below conventional thresholds, ruling out severe multicollinearity. The Breusch–Pagan and Wooldridge tests reveal the presence of heteroskedasticity and autocorrelation; therefore, the use of GLS ensures the consistency and efficiency of the estimated coefficients.

Table 5: Regression Results for Composite Audit Quality

Variable	VIF	OLS	FEM	REM	GLS
AUDITQUALITY	1.10	–0.00440***	–0.00377***	–0.00440***	–0.00422***
SIZE	1.10	0.00181***	0.00227***	0.00181***	0.00139***
CFO	1.06	–0.00087	–0.00064	–0.00087	–0.00224**
LEV	1.48	–0.00013	–0.00147	–0.00013	–0.00040
ROA	1.58	–0.00942***	–0.00669***	–0.00942***	–0.0233***
PPE	1.16	0.0398***	0.0477***	0.0398***	0.0322***
_cons		–0.0259***	–0.0406**	–0.0259***	–0.0119**
N		4960	4960	4960	4960
R-squared (R^2)		0.1360	0.1281		
Test F (FEM)		F (6,3951) = 69.53 Prob > F = 0.0000			
Wald test (OLS/REM)		Wald chi2 (9) = 592.17 Prob > chi2 = 0.0000		Wald chi2(9) = 592.17 Prob > chi2 = 0.0000	Wald chi2(9) = 902.64 Prob > chi2 = 0.0000
Hausman test		Chi2(6) = 40.99 Prob > chi2 = 0.0000			
Modified Wald test		Chi2(1003) = 173445.03 Prob > chi2 = 0.0000			
Wooldridge test		F (1,731) = 113.349 Prob > F = 0.0000			

t statistics in brackets p < 0.1, ** p < 0.05, *** p < 0.01

(Source: Data analysis from Stata 17.0)

The regression results (Table 5) indicate that the composite audit quality variable (AUDITQUALITY) exerts a negative and highly statistically significant effect on firms' cost of debt across all estimation methods (OLS, FEM, REM, and GLS). Specifically, the coefficient of AUDITQUALITY ranges from –0.00377 to –0.00440 and is significant at the 1% level, suggesting

that improvements in audit quality are associated with a substantial reduction in borrowing costs. This finding supports the argument that high-quality audits enhance the credibility of financial information, mitigate information asymmetry and moral hazard between firms and creditors, and thereby lower the risk premium embedded in lending interest rates.

Relative to the control variables, the impact of AUDITQUALITY is more stable and consistent, even after controlling for firm size (SIZE), profitability (ROA), operating cash flows (CFO), financial leverage (LEV), and asset structure (PPE). This result indicates that audit quality not only reflects firms' internal characteristics but also functions as an effective external monitoring mechanism in Vietnam's debt capital market. Accordingly, hypothesis H5 is supported.

Model selection tests indicate that the FEM is more appropriate than the REM based on the Hausman test, while the presence of heteroskedasticity and autocorrelation necessitates the use of GLS. Therefore, the GLS estimates are considered the most reliable. Overall, the empirical evidence provides robust support for the role of audit quality in reducing the cost of debt, thereby contributing to improved access to external financing and enhanced financial discipline among Vietnamese firms.

4.4. Robustness Checks

The regression results (Table 6) indicate that composite audit quality (AUDITQUALITY), constructed using principal component analysis (PCA), exerts a negative, stable, and highly statistically significant effect on firms' cost of debt across all estimation methods (OLS, FEM, REM, and GLS). The coefficient of AUDITQUALITY ranges from –0.00377 to –0.00440 and is consistently significant at the 1% level, suggesting that improvements in audit quality led to a systematic reduction in borrowing costs. This finding reinforces the argument that high-quality auditing mitigates information asymmetry and perceived credit risk, thereby lowering the risk premium required by creditors.

Notably, model diagnostic tests confirm the strong robustness of the results. The Hausman test supports the use of the FEM over the REM, while the Modified Wald and Wooldridge tests reveal the presence of heteroskedasticity and autocorrelation. The application of GLS effectively addresses these econometric issues and continues to yield consistent results in terms of the sign, magnitude, and statistical significance of AUDITQUALITY. Overall, these robustness checks substantiate the stability and reliability of the negative relationship between audit quality and the cost of debt in the Vietnamese context.

Empirical evidence from Vietnam demonstrates that both the composite audit quality measure (AUDITQUALITY) and audit firm size (BIG4) are negatively and statistically significantly associated with firms' cost of debt, thereby lending strong support to signaling theory and agency theory. These findings indicate that high-quality auditing alleviates information asymmetry and moral hazard, which in turn lowers the risk premium required by creditors [5], [3].

This evidence is consistent with prior studies conducted in France and Vietnam, which suggest that large audit firms (Big 4) play a dual role by enhancing the credibility of financial information and providing an implicit insurance function, ultimately improving firms perceived risk profiles in the eyes of financial institutions [5], [3]. By contrast, the results diverge from evidence reported for the Brazilian sugarcane industry, where engagement of Big 4 auditors does not significantly reduce the cost of debt because banks attach greater importance to "soft information" derived from long-term lending relationships than to auditor reputation [10]. This divergence implies that, in the Vietnamese market, "hard" signals such as audit firm reputation continue to play a more decisive role in credit assessment processes [10].

Table 6: Regression Results of Composite Audit Quality Based on PCA

Variable	OLS	FEM	REM	GLS
AUDITQUALITY_PCA	-0.000806***	–0.000707***	-0.000806***	-0.000688***
SIZE	0.00179***	0.00228***	0.00179***	0.00135***
CFO	-0.000864	-0.000631	-0.000864	-0.00224**
LEV	-0.000135	-0.00147	-0.000135	-0.00402
ROA	-0.00939***	-0.00667***	-0.00939***	-0.0233***
PPE	0.0398***	0.0476***	0.0398***	0.0322***
_cons	-0.0285***	-0.0433**	-0.0285***	-0.0139***
N	4960	4960	4960	4960
R-squared (R^2)	0.1357			
Test F (FEM)		F (6,3951) = 69.57 Prob>F=0.0000		
Wald test (OLS/REM)	Wald chi2(6) = 569.52 Prob>chi2= 0.0000		Wald chi2(6) = 569.52 Prob>chi2= 0.0000	Wald chi2(6) = 829.63 Prob>chi2= 0.0000
Hausman test		Chi2(6) = 40.81 Prob>chi2= 0.0000		
Modified Wald test		Chi2(1003) = 176245.95 Prob>chi2= 0.0000		
Wooldridge test		F (1,731) = 113.339 Prob>F= 0.0000		

t statistics in brackets p < 0.1, ** p < 0.05, *** p < 0.01

(Source: Data analysis from Stata 17.0)

4.5. Discussion

Furthermore, the positive association between non-unqualified audit opinions (QO) and the cost of debt suggests that creditors interpret such opinions as a strong signal of elevated risk. This

finding is consistent with the argument that increased uncertainty surrounding financial information heightens perceived information risk and, consequently, raises the cost of capital [21], [11]. The adoption of a composite audit quality measure in this study further reinforces the perspective that audit quality is inherently multidimensional and should not be captured through a single proxy [12], [24]. Overall, the findings confirm that investment in audit quality constitutes an effective financial strategy for firms seeking to optimize borrowing costs in emerging market contexts [12], [24].

5. CONCLUSION AND POLICY IMPLICATIONS

This study examines the impact of audit quality on the cost of debt of listed firms in Vietnam, adopting a dual approach to measuring audit quality: (i) individual components (BIG4, auditor change, audit opinion, and audit report lag) and (ii) a composite audit quality index constructed using both simple averaging and principal component analysis (PCA). The empirical results consistently demonstrate that higher audit quality contributes to a reduction in firms' cost of debt. At the component level, being audited by Big 4 audit firms and shorter audit report lags are negatively and statistically significantly associated with the cost of debt, highlighting the role of auditor reputation and the timeliness of financial information in mitigating information risks faced by creditors. By contrast, audit opinions and auditor changes exhibit heterogeneous effects across different model specifications, suggesting that Vietnam's debt market evaluates audit-related signals with varying degrees of importance.

Notably, when employing the PCA-based composite AUDITQUALITY index, the results reveal a strong, stable, and highly statistically significant negative effect on the cost of debt across all estimation methods (OLS, FEM, REM, and GLS). This finding confirms that a composite measurement approach more fully captures the multidimensional nature of audit quality and enhances the explanatory power of the empirical model. Diagnostic tests (Hausman, Modified Wald, and Wooldridge), together with GLS estimation, indicate that the results are robust and reliable for deriving both academic and practical implications.

Based on these findings, several important recommendations are proposed. First, for firms, investing in audit quality particularly through the selection of reputable audit firms, improving the quality of accounting systems, and ensuring the timeliness of financial reporting not only serves compliance purposes but also yields direct economic benefits by lowering borrowing costs. Second, for credit institutions and lenders, audit quality should be incorporated as a key criterion in credit risk assessment and loan pricing decisions. The use of composite audit quality indices may enhance the accuracy of firm risk evaluations. Third, for regulators, it is essential to further the legal framework governing independent auditing, strengthen oversight of audit quality, and promote greater transparency in financial reporting. Encouraging the adoption of accounting and

auditing standards aligned with international best practices would also help enhance confidence in both capital and debt markets.

Finally, this study opens a new avenue for future research by employing composite audit quality indices, thereby contributing to a deeper understanding of the role of auditing in reducing the cost of capital and improving resource allocation efficiency in the Vietnamese economy. Despite its meaningful contributions, the study has certain limitations. First, the sample focuses solely on listed firms in Vietnam, which may limit the generalizability of the findings to unlisted firms. Second, audit quality is primarily measured using secondary data and quantitative proxies, which may not fully capture qualitative aspects such as auditor competence or audit processes. Future research could expand the sample scope, examine industry-specific contexts, and incorporate new measurement approaches and mediating variables such as corporate governance or credit risk to further elucidate the underlying mechanisms.

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