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The Effect of Firm-specific Information Risk on the Cost of Capital, the Moderating Role of Audit Quality

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ABSTRACT

This paper investigates the link between firm-specific information and the cost of capital. We construct six hypotheses. The first three hypotheses concern how a firm's information risk manifests itself in that firm's cost of capital, and the others concern the moderating role of audit quality on the link between the firm-specific information risk and the cost of capital. Data for the research is collected from the Vietnamese stock market in the period from 2009 to 2021 and use three proxies for the cost of capital, including the cost of equity capital, the cost of debt, and the stock returns. We apply multiple statistical econometric models to test the hypotheses and enhance the accuracy of the regression results, including the Pooled OLS (OLS) model, the Random Effects (RE), and the Fixed Effects (FE). Our main results demonstrate that all three measures of the cost of capital are negatively associated with accrual quality, which is the proxy of informational risk. This result implies that a firm with a higher level of accruals quality or a lower level of informational risk has a lower cost of capital. The outcomes for our main models also show that accruals quality manifests its influence on the cost debt and the stock return stronger under the effect of audit quality as a moderator. Firms using Big4 auditing services seem to have a better quality of accruals and lower cost of capital. The impact of audit quality on the relationship between accruals quality and the cost of equity, however, is insignificant but it is understandable in the context of the Vietnamese market.

INTRODUCTION

The relationship between firm-specific information risk and the cost of capital has become a topic of interest for various scholars in the area of corporate finance. The key question associated with this relationship is whether firm-specific information risk can be diversifiable and is a priced risk indicator. Many researchers conduct studies on this topic and provide theoretical and empirical evidence for the relationship between firm-specific information risk and the cost of capital, implying that firm-specific information risk is a priced risk factor (Eliwa et al., 2019; Francis et al., 2005; Kim and Qi, 2010; Hong et al. 2019). However, other papers report contrasting findings that information risk is not relevant in determining the cost of capital or affecting the pricing decisions (Cohen, 2008; Khan, 2008; McInnis, 2010). Thus, the answer to the key question remains controversial.

Our literature review shows that there are three proxies for the cost of capital commonly used by prior research, including the stock return, the cost of debt, and the cost of equity. These are different concepts and are measured in different ways. However, no study has been found to investigate all three measures and compare results among them. This might be one of the reasons leading to inconsistent outcomes on the relationship between information risk and the cost of capital. In this paper, we will examine the effect of firm-specific information risk (proxied by accruals earnings) on each of the above-mentioned measures for the cost of capital to facilitate the comparison among them. We contribute to the literature as the first paper to consider the effect of information risk from multiple market participants' perspectives: outside investors, shareholders, and lenders. The context of our research is the Vietnamese market.

Current literature also pays attention to the influences of factors that can control the quality of the information disclosed by firms on the link between information risk and the cost of capital (Ahmed et al., 2021; Hsieh et al., 2019). Research by Nuryaman (2013) assesses the impact of earnings management on stock return with audit quality as a moderator. He finds out that the negative effect of earnings management on stock return manifests greater for companies that have a higher quality of external auditors. In Vietnam, recent studies by Le et al. (2021) and Van et al. (2022) incorporate the role of audit quality in their models. However, the audit quality variable only serves as a control variable in their tests or is considered independently as an explanatory variable for the cost of capital. Our paper will fill this gap, observing the combined effect of audit quality and information risk on the cost of capital. This is the second contribution of our research to the literature.

The next content of the paper is structured as follows: Section 2 provides the related literature and the hypothesis development; Section 3 is the research methodology; Section 4 presents the empirical analysis and the discussion; Section 5 concludes our study.

1. LITERATURE REVIEW

1.1 Firm-specific information risk and the cost of capital

Firm-specific information risk can be understood as the probability that factors related to a specific company, within a specific business sector, can cause financial loss to an outside investor (Feldman and Feldman, 2023; Safdar and Yan, 2017). The traditional view is that firm-specific information can be diversified and therefore, it is ignored in the Capital Asset Pricing Model to calculate the expected return on investment (Fama and French, 1993; Widianingsih et al., 2022). However, theoretical frameworks developed by Easley and O'Hara (2004) and Lambert et al. (2007) demonstrate that firm-specific information risk is priced by the capital market and this type of risk does not disappear by diversification. The root cause of the risk can be the asymmetry of information between informed and uninformed investors (Easley and O'Hara, 2004) or the precision of information disclosed by firms (Lambert et al., 2007). Recent literature also provides more support for this view. Eliwa et al. (2019) re-examine the theory in European countries, respectively. They incorporate the time of the financial crisis (2008-2009) in their studies and particularly observe the relationship under the impact of this period. The report is that in European markets, only the accrual quality component driven by national characteristics and market forces (innate accrual quality) is relevant in determining the cost of capital. Similarly, research by Da Silva and Nardi (2017), Hong et al. (2019), and Orazalin and Akhmetzhanov (2019), despite using different measures for the cost

of capital (the cost of equity capital, the stock return, and the cost of debt, respectively), still report the same findings on the negative and significant association between accrual quality and the cost of capital.

Nevertheless, not only one single study claims mixed results or inconsistent outcomes to the above-mentioned papers (Beyer et al. 2010, Core et al., 2008; De Albornoz Noguer and Illueca Munoz, 2007). Beyer et al. (2010) conclude in their research that “we have not been able to draw unambiguous conclusions on whether and how information quality affects the cost of capital”. Cohen et al. (2008) and Liu and Wysocki (2017) document that the impact of firm-specific information risk proxied by accrual earnings on the firm’s cost of capital is insignificant but it is sensitive to the choices of research design. Similarly, by performing well-specified asset-pricing models, Core et al. (2008) find no support that accruals earnings is a priced risk factor.

In Vietnam, the outcomes reported are also inconsistent. While research by Dang and Van (2020), Le et al. (2021), and Van et al. (2022) posit that accruals quality is negatively associated with the cost of capital, a paper by Phung et al. (2018) finds no significant connection between the two factors. These contrasting outcomes are also one motivation for us to carry out this study. One new point in our paper is that we will incorporate all three measures for the cost of capital in the paper, including the cost of debt capital, the cost of equity capital, and the stock return, in order to facilitate the comparison among them. We propose three hypotheses corresponding to these three measures:

H1.1: Firm-specific information risk (accrual quality) has a positive (negative) impact on the cost of debt.

H1.2: Firm-specific information risk (accrual quality) has a positive (negative) impact on the cost of equity capital.

H1.3: Firm-specific information risk (accrual quality) has a positive (negative) impact on the stock return.

1.2 The moderating role of audit quality

Agency conflicts (for example between management and shareholders) and information asymmetry (between insiders and outsiders) lead to concerns about the quality of information presented in financial reports. The work of an independent audit is one effective and essential mechanism to mitigate these problems. The auditors can contribute to the reliability and integrity of their client’s financial statements by ensuring that all the material misstatements in these documents are uncovered and reported. So the quality of an audit depends not only on the auditors’ ability to detect material misstatements but also on the auditors’ willingness to report errors and frauds. The high audit quality can help to reduce investors’ risk associated with firm-specific information, and in turn, affect their pricing decisions (Houque et al., 2017; Le et al., 2021).

With the essential role of the audit, previous studies have expanded the scope of the work in the literature on the priced risk attribute of information risk by investigating the moderating effect of audit quality on the relationship between information risk and the cost of capital. Nuryaman (2017) found a greater impact of earnings management on stock return for companies audited by Big4 audit firms that are normally considered to provide higher quality audits. He claims that audit quality can strengthen the negative relationship between earnings management and stock return. Houque et al. (2017) examine the interrelation among three factors in the context of the Indian market and come to the same conclusion that companies using higher quality have lower levels of earnings accrual and enjoy a lower cost of capital.

Studies by Le et al. (2021) and Van et al. (2022) in the Vietnamese market inspect the relationship among accrual quality, audit quality, and the cost of capital. Although both papers are based on the argument that a high-quality audit can enhance the accrual quality, and thus, reduce the firm’s cost of capital, they only examine the direct effect of audit quality on the cost of capital and ignore the moderating role of audit quality. Our paper will bridge this gap. We investigate both the direct effect and moderating effect of audit quality but stress our emphasis on the second. Our hypotheses are developed as below:

H2.1: The combined effect of audit quality and accrual quality reduces the cost of debt

H2.2: The combined effect of audit quality and accrual quality reduces the cost of equity capital

H2.3: The combined effect of audit quality and accrual quality reduces the stock return

Figure 1 illustrates six above hypotheses of our study.

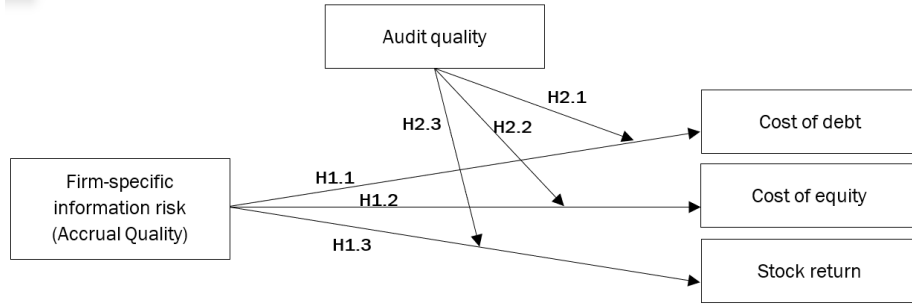


Figure 1. The illustration of the research hypotheses

Source: own

2. RESEARCH DESIGN

2.1 Measure for firm-specific information risk

To calculate the accruals quality, we follow McNichols (2002) to modify the model by Dechow and Dichev (2002). Dechow and Dichev (2002) proposed an empirical measure for accruals quality as the residual from firm-specific regression of changes in working capital on the previous, current, and next-year operating cash flows. McNichols (2002) argues that the change in current period sales and the change in the level of fixed assets are the significant correlated omitted variables in this model. Therefore, he adds these two indicators in the model to control for their effects. The modified estimation involves three main steps as follows:

Step 1: Calculating the firm's total accruals

$$TAC_{i,t} = \Delta ASSET_{i,t} - \Delta LIABILITY_{i,t} - \Delta CASH_{i,t} + \Delta DEBT_{i,t} \quad (1)$$

Where i and t denote firm and year, respectively. TAC is the total accruals (also called the accrued working capital). $\Delta ASSET$, $\Delta CASH$, $\Delta LIABILITY$, and $\Delta DEBT$ are the change in current assets, the change in cash and cash equivalents, the change in short-term debt, and the change in short-term bank debt, respectively. The change is measured by taking the end-year value of the current year minus the end-year value of the previous year.

Step 2: Regressing working capital accruals on the last, current, and the following-year operating cash flows, change of sales, and firm's total fixed assets.

$$\frac{TAC_{i,t}}{TA_{i,t-1}} = \beta_0 + \beta_1 \frac{CF_{i,t-1}}{TA_{i,t-1}} + \beta_2 \frac{CF_{i,t}}{TA_{i,t-1}} + \beta_3 \frac{CF_{i,t+1}}{TA_{i,t-1}} + \beta_4 \frac{\Delta SALES_{i,t}}{TA_{i,t-1}} + \beta_5 \frac{PPE_{i,t}}{TA_{i,t-1}} + \varepsilon_{i,t} \quad (2)$$

Where CF is the operating cash flow. $\Delta SALES$ is the change in sales (revenue). PPE is the firm's total fixed assets which is the gross value of property, plant, and equipment. TA is the firm's total assets. The inclusion of TA in the model is to mitigate the problem of Heteroscedasticity.

Step 3: Accruals quality is generated as the standard deviation of the residuals (ε_i) from Eq. (2):

$$AQ_{i,t} = STDEV(\varepsilon_i) * (-1) \quad (3)$$

Where AQ is the firm's accruals quality. STDEV is the standard deviation. ε is the residual from the regression in step 2 (see Eq.2). The standard deviation is calculated from the residuals for the most recent five-year period.

For interpretation, the higher level of the standard deviation of the residual means can be understood as a higher level of accruals volatility, implying a lower or poorer level of accruals quality and a higher level

of information risk. As the result, we multiply the value of standard deviation by minus one (-1) to facilitate interpretation.

2.2 Research Model

To analyze the impact of accrual quality on the cost of equity, the cost of debt, and stock return, we build three separate models that have accruals quality as the independent variable and employ the cost of equity (EP) (see Eq. (4)), the cost of debt (CD) (see Eq. (5)), and stock return (RETURN) (see Eq. (6)) as the dependent variables. Moreover, to observe the moderating role of audit quality, the interaction term between audit quality and accruals quality (AQ*AUDIT) is added to Eq. (4), Eq. (5), and Eq. (6). We control for the effects of firm size (SIZE), firm leverage (LEV), firm growth (TobinsQ), and audit quality (AUDIT), industry dummies (INDUSTRY), and time dummies (YEAR).

$$EP_{i,t} = \alpha_0 + \alpha_1 AQ_{i,t} + \alpha_2 AUDIT_{i,t} + \alpha_3 AQ_{i,t} * AUDIT_{i,t} + \alpha_4 SIZE_{i,t} + \alpha_5 LEV_{i,t} + \alpha_6 TobinsQ_{i,t} + \alpha_7 INDUSTRY + \alpha_8 YEAR + \mu_{i,t} \quad (4)$$

$$CD_{i,t} = \alpha_0 + \alpha_1 AQ_{i,t} + \alpha_2 AUDIT_{i,t} + \alpha_3 AQ_{i,t} * AUDIT_{i,t} + \alpha_4 SIZE_{i,t} + \alpha_5 LEV_{i,t} + \alpha_6 TobinsQ_{i,t} + \alpha_7 INDUSTRY + \alpha_8 YEAR + \mu_{i,t} \quad (5)$$

$$RETURN_{i,t} = \alpha_0 + \alpha_1 AQ_{i,t} + \alpha_2 AUDIT_{i,t} + \alpha_3 AQ_{i,t} * AUDIT_{i,t} + \alpha_4 SIZE_{i,t} + \alpha_5 LEV_{i,t} + \alpha_6 TobinsQ_{i,t} + \alpha_7 INDUSTRY + \alpha_8 YEAR + \mu_{i,t} \quad (6)$$

Where *i* and *t* denote firm and year, respectively. EP represents the firm's equity cost, measured as the earnings-price ratio of that firm adjusted by the median of the industry earnings-price ratio. AUDIT stands for audit quality which is defined by distinguishing between firms audited by a Big4 (AUDIT=1) to firms audited by other audit companies (AUDIT=0). CD is the firm's cost of debt proxied by interest expense as a percent of interest-bearing debt (Pittman and Fortin, 2004; Van et al., 2022). RETURN is the firm's stock return. AQ is accruals quality, measured from the standard deviation of the residuals of a firm in five-year time (from year *t*-4 to year *t*) (see Eq. (1), (2), and (3)). SIZE is the size of the firm, measured as the natural logarithm of the market value of firms' total assets; LEV is the leverage of the firm, calculated as total interest-bearing debts divided by the total assets; TobinsQ is the market-to-book ratio, measured as the total market value of equity and book value of debt in a firm divided by the firm's book value of total assets.

According to our hypotheses, higher quality of accruals and audit can contribute to the decrease in the level of cost of capital. We expect that the coefficients (α_1) and (α_2) across the three models are negative. Coefficients for interaction terms between accruals quality and audit quality (α_3) are also expected to be negative.

3. DESCRIPTIVE STATISTICS, RESULTS, AND DISCUSSION

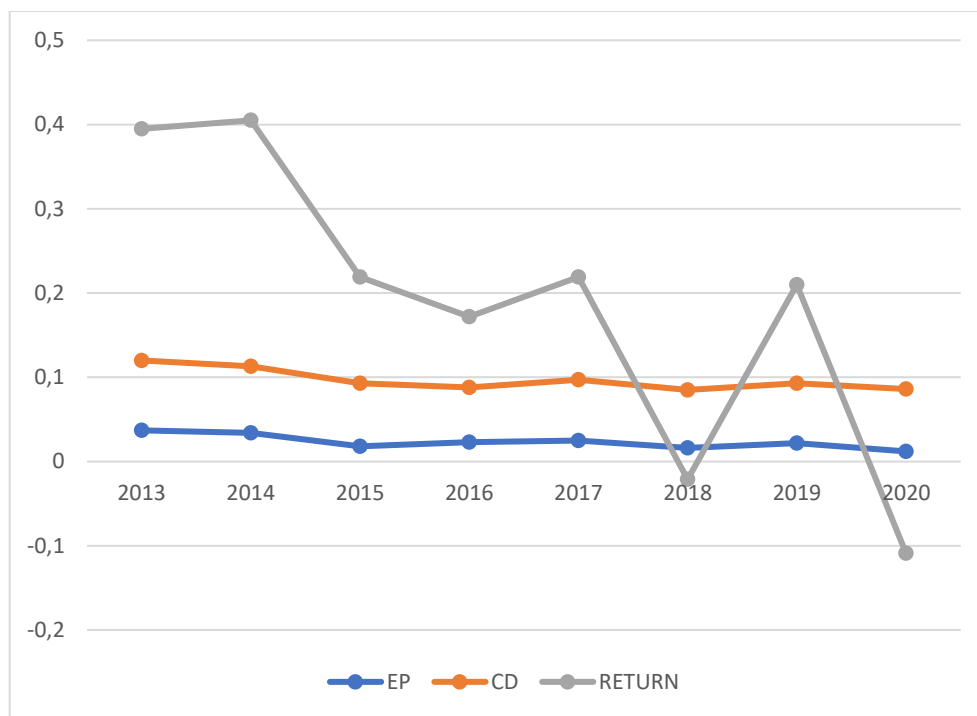
3.1 Statistic Description

In order to estimate the total accruals value for one year, we need available data on the firm cash flow for the following year. In addition, accruals quality is calculated from the standard deviations of Eq. (2)'s residuals in five-year time backward from the current year. So our studied period is 8 years (2013-2020) with data gathered from 2009 to 2021. Our data is collected for the Hochiminh City Stock Exchange, the main Stock Exchange in Vietnam. We rule out financial companies and firms with negative earnings because their price-earnings ratios are not meaningful (Francis et al., 2005). The final data sample contains 236 firms with 1,286 observations.

Table 1 and Figure 2 depict the research data according to each year. Overall, we can see the mean value of all three metrics decreased through the period from 2013 to 2020. Especially, the year 2020 sees the worst performance of the earnings-price ratio and stock return (0.012 and -0.195, respectively). These results can be explained as the consequences of the Covid pandemic.

Table 1. Description of data sample by year

	2013	2014	2015	2016	2017	2018	2019	2020
No. of Obs.	118	140	136	154	162	170	188	218
EP	0.037	0.034	0.018	0.023	0.025	0.016	0.022	0.012
CD	0.083	0.079	0.075	0.065	0.072	0.069	0.071	0.074
RETURN	0.275	0.292	0.126	0.084	0.122	-0.106	0.117	-0.195

**Figure 2.** Earnings-price ratio, the cost of debt, and stock return through the years

Source: own

Table 2 statistically describes all research variables in terms of their max, min, mean, standard deviation, and median values.

Table 2. Descriptive statistics

	EP	CD	RETURN	AQ	AUDIT	LEV	SIZE	TobinsQ
Max	0.601	0.337	4.814	0.006	1.000	0.583	44.459	9.044
Min	-0.259	0.000	-0.910	-0.475	0.000	0.001	13.413	0.094
Mean	0.022	0.073	0.066	-0.211	0.398	0.239	23.018	1.203
SD	0.117	0.062	0.532	0.186	0.267	0.134	2.565	0.636
Median	0.042	0.063	-0.005	-0.179	0.000	0.262	13.977	1.011

Accruals quality (AQ) is estimated from the standard deviation of Eq. (2)'s residuals. The higher standard deviation implies a lower quality of the audit. The standard deviation of residuals can be considered an inverse measure of audit quality. Therefore, to facilitate the interpretation, we measure accruals quality by multiplying the standard deviation by minus one (-1). It is noticeable that the quality of the accruals for the Hochiminh city stock exchange is quite low, with the maximum, minimum, mean, and median values of accruals quality being 0.006, -0.475, -0.211, and -0.179. The mean and median figures for the UK market

are 0.084 and 0.059 (Eliwa, 2016); for the Australian market are 0.081 and 0.064 (Gray et al., 2009); and for the Malaysian market are 0.043 and 0.029 (Majid et al., 2022).

Table 3 presents the correlation between each pair of dependent variables. All the correlation values are small than 0.5, presenting no suspicion for the heavy multicollinearity issue.

Table 3. Correlation matrix

	<i>EP</i>	<i>CD</i>	<i>RETURN</i>	<i>AQ</i>	<i>AUDIT</i>	<i>AQ*AUDIT</i>	<i>LEV</i>	<i>SIZE</i>	<i>TobinsQ</i>
<i>EP</i>	1								
<i>CD</i>	.312**	1							
<i>RETURN</i>	.450*	-.037	1						
<i>AQ</i>	-.282**	-.015*	-.023*	1					
<i>AUDIT</i>	-.027**	-.032**	-.052**	.018***	1				
<i>AQ*AUDIT</i>	-.458**	-.004*	-.012**	.443**	.200	1			
<i>LEV</i>	-.006	.104***	-.016	-.009	-.011**	-.011*	1		
<i>SIZE</i>	-.004***	-.219**	-.057***	.055	.336***	.038	.096***	1	
<i>TobinsQ</i>	-.033**	.235*	0.152	-.033**	.127	-.003	-.037***	.132***	1

Note: *, **, and *** indicate statistical significance at 1%, 5%, and 10% levels, respectively.

3.2 Results

3.2.1 Main Models

To deal with the panel dataset, we perform multi-regressions, including Pooled OLS, Fixed Effects, and Random Effects. The F-test and Hausman test show that the fixed effects model is the better fit for all three models. We also run the fixed effect with robust standard errors as heteroskedasticity is problematic.

Table 4 presents Robust Fixed Effects results for our main models 1, 2, and 3 to investigate the impact of firm-specific information risk (proxied by accruals quality *AQ*) on the firm's cost of capital and the moderating role of audit quality (*AUDIT*) on this relationship. Columns (1), (3), and (5) display the results of main models 1, 2, and 3 without the moderating role of variable audit quality, and columns (2), (4), and (6) exhibit the estimation for the full models.

Table 4. Results for robust fixed effects (FM)

	<i>Model 1 (EP)</i>		<i>Model 2 (CD)</i>		<i>Model 3 (RETURN)</i>	
	1	2	3	4	5	6
<i>AQ</i>	-0.1264*** (0.0506)	-0.1203*** (0.0761)	-0.1992** (0.0645)	-0.1361** (0.0350)	-0.3157*** (0.0208)	-0.4073** (0.0241)
<i>AUDIT</i>	-0.0120** (0.0028)	-0.0135* (0.0031)	-0.0164** (0.0132)	-0.0208** (0.0078)	-0.1553*** (0.0903)	-0.1872*** (0.1164)
<i>AQ*AUDIT</i>		-0.7622 (0.2739)		-0.6388*** (0.3821)		-1.1006*** (0.7419)
<i>SIZE</i>	-0.0010** (0.0002)	-0.0013*** (0.0011)	-0.0033*** (0.0014)	-0.0027*** (0.0010)	-0.0607*** (0.0413)	-0.0522*** (0.0269)
<i>LEV</i>	-0.0094 (0.0038)	-0.0118 (0.0097)	0.0237** (0.0143)	0.0184** (0.0144)	0.0528 (0.0111)	0.0523 (0.0386)
<i>TobinsQ</i>	-0.0125** (0.0056)	-0.0126** (0.0042)	-0.0255** (0.0081)	-0.0249** (0.0179)	-0.1197*** (0.0185)	-0.1206*** (0.0184)
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Industry Dummies	Yes	Yes	Yes	Yes	Yes	Yes

Constant	0.4694	0.5120	0.2308	0.1367	0.1666	0.1179
R_square	0.1916	0.1982	0.1404	0.1432	0.1755	0.1769
F Test	23.64***	55.11***	26.72***	22.07***	19.33***	16.58***
Hausman Test	(33.29)***		(25.68)***		(7.04)***	
Heteroskedasticity	0.03***		1.26***		0.00***	
No. of Observations	1,286	1,286	1,286	1,286	1,286	1,286

Note: *, **, and *** indicate significance at 1%, 5%, and 10% levels, respectively. Standard error values are in parentheses.

Through all the estimations, we can notice that all three measures of the cost of capital (EP, CD, and RETURN) are inversely associated with accruals quality (AQ). All of these estimations are significant. A firm that has a higher quality of accruals can enjoy a lower cost of debt, a lower price-earnings ratio, and lower stock returns required by investors. Hypotheses H1.1, H1.2, and H1.3 are accepted. Accruals quality or risk related to firm-specific information is relevant in determining a firm's cost of capital. Not only outside investors but also shareholders and creditors take accruals quality into consideration when making their investment or financing decisions. Our outcomes are in line with previous papers on the same topic, for example, research by Easley and O'Hara (2004), Lambert et al. (2007), and Dang and Vu (2020) use the stock return as the proxy for the cost of capital; research by Gray et al. (2009), Eliwa et al. (2016), Le et al. (2021), Van et al. (2022) use the cost of debt and/or the cost of equity capital as the measure for the cost of capital. One different point in our paper which can be considered a new contribution to the literature is that all three measures for the cost of capital are investigated and compared in our research. By revealing consistent results to prior studies, we provide stronger evidence and support for the literature on the relationship between the cost of capital and information risk.

Audit quality exhibits a significant and negative association with the cost of capital through all models. Our finding supports the research of Le et al. (2021) in the Vietnamese market, suggesting that firms audited by a Big4 have a lower cost of equity than firms using non-Big4 companies' auditing services.

The variable AQ*AUDIT represents the effect of audit quality on the sensitivity of the cost of capital to accruals quality. In other words, it reflects the combined effect of accruals quality and audit quality on the cost of capital. The coefficients estimated for this variable in models (1), (2), and (3) are all negative and show (-0.7622), (-0.6388), and (-1.1006), respectively. However, only the last two figures are significant at the levels of 5% and 1%, respectively, indicating that the combined effect of accruals quality and audit quality has negative and significant influences on the cost of debt and also investors' stock returns but insignificant effects on the cost of equity capital. These outcomes support hypotheses H2.1 and H2.3 but reject H2.2. The confirmation of H2.1 and H2.3 imply that audit quality is capable of monitoring the quality of accruals. Audit plays a crucial role in terms of market participants' appraisal of the risk associated with accruals quality. In detail, Vietnamese listed companies audited by a Big4 are believed to have better accruals quality and more reliable information disclosed, which in turn can help to mitigate informational risk for outside investors and creditors and hence, reduce the firm's cost of capital. In this paper, we observe both the direct impact and moderating role of the audit on the cost of capital, and two out of three coefficients show negative results, demonstrating inverse directions in their relationship. Investors and creditors place more trust in financial reports audited by a Big4 audit firm. In addition, in model 2 using the cost of debt as the measure for the cost of capital, the significance level of estimation for the interaction term AU*AUDIT is larger than the variable AUDIT alone, implying that the moderating effect of AUDIT on the link between accruals quality and the cost of capital is stronger and more prominent. The insignificant result of the variable AQ*AUDIT on the cost of equity is also explainable. Vietnam is a frontier market characterized by highly concentrated ownership. In Vietnamese listed companies, managers still hold a large proportion of shares (Nguyen, Vu, and Doan, 2020). Therefore, to some extent, there is a low level of information asymmetry between managers and shareholders in some enterprises, which can in turn affects the joint impact of audit quality and accruals quality on the cost of equity capital.

3.2.2 Robustness

Table 5 presents the results of our first robust test for the period excluding the Covid time. The period of 2013-2020 includes a year of the Covid pandemic 2020. This is the first year of the pandemic and also the year when the world economy in general and the stock markets, in particular, were heavily affected. The Vietnamese stock market is not an exception and has witnessed big drops in the 2nd and 3rd quarters (Tam, 2023). During this time, almost economic activities seem to be suspended to prevent the spread and repel the pandemic. Therefore, we provide a robust check for the period from 2013 to 2019 to see whether the results still hold. Overall, we can see from Table 5 that the tests for the Covid time also confirm the significant and inverse effects of accruals quality on the cost of capital. Strikingly, the coefficients for the combined impact of accrual quality and audit quality on the cost of capital are negative and significant in all three models, indicating the essential role of audit quality in moderating the association between the two other factors. All six hypotheses are accepted by the outcomes of the robust test.

Table 5. Fixed effects (FM) estimates for the period of 2013-2019

	<i>Model 1 (EP)</i>		<i>Model 2 (CD)</i>		<i>Model 3 (RETURN)</i>	
	1	2	3	4	5	6
AQ	-0.2074***	-0.3008***	-0.2469***	-0.2273***	-0.7089***	-0.8215***
	(0.0392)	(0.1104)	(0.0902)	(0.1194)	(0.0826)	(0.1037)
AUDIT	-0.0402**	-0.0406**	-0.0237**	-0.0241**	-0.5144***	-0.5206**
	(0.0027)	(0.0115)	(0.0061)	(0.0061)	(0.1209)	(0.3424)
AQ*AUDIT		-0.6145**		-0.7083**		-1.2504***
		(0.1702)		(0.2029)		(0.2765)
SIZE	-0.0009***	-0.0010***	-0.0033***	-0.0033***	-0.0075***	-0.0077***
	(0.0005)	(0.0008)	(0.0014)	(0.0012)	(0.0039)	(0.0046)
LEV	-0.0417	-0.0335	0.0082**	0.0128**	0.0536*	0.0579*
	(0.0161)	(0.094)	(0.021)	(0.0103)	(0.0246)	(0.0108)
TobinsQ	-0.0107***	-0.0185***	-0.0245**	-0.0114**	-0.1280***	-0.1552***
	(0.0900)	(0.0171)	(0.0108)	(0.0096)	(0.0120)	(0.0424)
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Industry Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.406	0.538	0.330	0.294	-.404	-0.275
R_square	0.1911	0.1932	0.1564	0.1601	0.1686	0.1693
F Test	55.37***	58.09***	108.24***	88.63***	19.61***	25.11***
No. of Observations	1,098	1,098	1,098	1,098	1,098	1,098

Note: *, **, and *** indicates significance at 1%, 5%, and 10%, respectively. Standard error values are in parentheses.

CONCLUSION

This paper investigates the link between firm-specific information and its cost of capital. We strive for the answer to the question concerning how a firm's information risk manifests itself in that firm's cost of capital. Our research has made two main contributions to the extensive literature on the relationship between information risk and the cost of capital. Firstly, companies can use different types of capital to finance their assets, for example, debt, equity capital, or new capital mobilized from the stock market and each of these types is calculated differently. Hence, some previous studies on the same topics employ the cost of debt while others use the cost of equity or stock returns as the proxy for the cost of capital. To facilitate comparison, we include all three above measures in our paper to observe their impacts on the information risk measured by the accruals quality. Our tests report on the consistent results that all three measures are shown to be inversely correlated to the accruals quality. Secondly, this study is one of the few that examines the moderating role of audit quality on the association between firm-specific information risk and the cost of capital. Audit quality is one crucial factor in monitoring the quality of information disclosed by firms. Therefore, we argue that the quality of the audit can influence the sensitivity of the cost of capital to accruals quality. This is another finding of our research. Audit quality can strengthen the relationship. Listed firms audited by a Big4 tend to have a better quality of accruals (which means a lower level of information risk) and can enjoy the lower cost of equity.

The findings have important implications for managers. It is essential to maintain a high quality of publicly available information. This can be done through the effective corporate governance mechanism and the use of services from reputable auditing firms. By doing this, the company can gain trust of market participants and reduce their cost of capital.

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REFERENCES

- Ahmed, A. H., Tahat, Y., Eliwa, Y., Burton, B. (2021), "Earnings quality and the cost of equity capital: evidence on the impact of legal background", *International Journal of Accounting & Information Management*, Vol. 29, No. 4, pp. 631–650, <https://doi.org/10.1108/IJAIM-05-2021-0092>
- Beyer, A., Cohen, D., Lys, T., Walther, B. (2010), "The financial reporting environment: Review of the recent literature", *Journal of Accounting & Economics*, Vol. 50, No. 2, pp. 296–343. <https://doi.org/10.1016/j.jacceco.2010.10.003>
- Cohen, D. (2008). "Does information risk really matter? An analysis of the determinants and economic consequences of financial reporting quality", *Asia-Pacific Journal of Accounting and Economics*, Vol. 15, No. 2, pp. 69–90, <https://doi.org/10.1080/16081625.2008.9720812>
- Da Silva, R.L.M., Nardi, P.C.C. (2017), "Full adoption of IFRSs in Brazil: Earnings quality and the cost of equity capital", *Research in International Business and Finance*, Vol. 42, pp. 1057–1073, <https://doi.org/10.1016/j.ribaf.2017.07.041>
- De Albornoz Noguer, B.G., Illueca Munoz, M. (2007), "The quality of accruals does not affect the cost of debt for Spanish small and medium-sized firms", *Investigaciones Economicas*, Vol. 31, No. 1, pp. 79–117.
- Dechow, P.M., Dichev, I.D. (2002), "The Quality of Accruals and Earnings: The Role of Accrual Estimation Errors", *The Accounting Review*, Vol. 77, pp. 35–59, <https://doi.org/10.2308/accr.2002.77.s-1.35>

- Easley, D., O'Hara, M. (2004), "Information and the cost of capital", *The Journal of Finance*, Vol. 59, No. 4, pp. 1553-1583, <https://doi.org/10.1111/j.1540-6261.2004.00672.x>
- Eliwa, Y., Gregoriou, A., Paterson, A. (2019), "Accruals quality and the cost of debt: the European evidence. *International Journal of Accounting and Information Management*", Vol. 27, No. 2, pp. 333-351, <https://doi.org/10.1108/IJAIM-01-2018-0008>
- Eliwa, Y., Haslam, J., Abraham, S. (2016), "The association between earnings quality and the cost of equity capital: evidence from the UK", *International Review of Financial Analysis*, Vol. 48, pp. 125-139, <https://doi.org/10.1016/j.irfa.2016.09.012>
- Fama, E., French, K. (1993), "Common risk factors in the returns on stocks and bonds", *Journal of Financial Economics*, 33(1), 3-56. [https://doi.org/10.1016/0304-405X\(93\)90023-5](https://doi.org/10.1016/0304-405X(93)90023-5)
- Feldman, S., Feldman, T. (2023). Understanding the Firm-Specific Risk Premium. *Journal of Business Valuation & Economic Loss Analysis*, Vol. 1, <https://doi.org/10.1515/jbvela-2023-0004>
- Francis, J., La Fond, R., Olsson, P., Schipper, K. (2005) "The market pricing of accruals quality", *Journal of Accounting and Economics*, Vol. 39, No. 2, pp. 295-327, <https://doi.org/10.1016/j.jacceco.2004.06.003>
- Gray, P., Koh, P.S., Tong, Y.H. (2009), "Accruals Quality, Information Risk and Cost of Capital: Evidence from Australia", *Journal of Business Finance and Accounting*, Vol. 36, No. 1-2, pp. 51-72, <https://doi.org/10.1111/j.1468-5957.2008.02118.x>
- Hong, P.K., Ma, T., Zhang, G. (2019), "Accruals Quality and Cost of Capital: Evidence from the Chinese Stock Market", *Journal of International Accounting Research*, Vol. 18, No. 1, pp. 71-95, <https://doi.org/10.2308/jiar-52216>
- Houque, M.N., Ahmed, K., van Zijl, T. (2017), "Audit quality, earnings management, and cost of equity capital: Evidence from India", *International Journal of Auditing*, Vol. 21, pp. 177-189, <https://doi.org/10.1111/ijau.12087>
- Hsieh, T.-Y., Shiu, Y.-M., Chang, A. (2019), "Does institutional ownership affect the relationship between accounting quality and cost of capital? A panel smooth transition regression approach", *Asia Pacific Management Review*, Vol. 24, No. 4, pp. 327-334.
- Hung, D. N., Van, V. T. T. (2020), "Studying the impacts of earnings quality on stock return: Experiments in Vietnam", *International Journal of Advanced and Applied Sciences*, Vol. 7, No. 4, pp. 45-53, <https://doi.org/10.21833/ijaas.2020.04.007>
- Khan, M. (2008), "Are accruals mispriced? Evidence from tests of an intertemporal capital asset pricing model", *Journal of Accounting and Economics*, Vol. 45, No. 1, pp. 55-77, <https://doi.org/10.1016/j.jacceco.2007.07.001>
- Kim, D., Qi, Y. (2010), "Accruals quality, stock returns, and macroeconomic conditions", *The Accounting Review*, Vol. 85, No. 3, pp. 937-978, <https://doi.org/10.2308/accr.2010.85.3.937>
- Lambert, R., Leuz, C., Verrecchia, R. (2012), "Information asymmetry, information precision, and the cost of capital", *Review of Finance*, Vol. 16, No. 1, pp. 1-29.
- Lambert, R., Leuz, C., Verrecchia, R. (2007), "Accounting information, disclosure and the cost of capital", *Journal of Accounting Research*, Vol. 45, No. 2, pp. 385-420, <https://doi.org/10.1111/j.1475-679X.2007.00238.x>
- Le, H.T.T., Tran, H.G., Vo, X.V. (2021), "Audit quality, accruals quality and the cost of equity in an emerging market: Evidence from Vietnam", *International Review of Financial Analysis*, Vol. 77, <https://doi.org/10.1016/j.irfa.2021.101798>
- Le, H.T.T., Vo, X. V., Vo, T.T. (2021), "Accruals quality and the cost of debt: Evidence from Vietnam", *International Review of Financial Analysis*, Vol 76, <https://doi.org/10.1016/j.irfa.2021.101726>
- Liu, M., Wysocki, P. (2017), "Cross-Sectional Determinants of Information Quality Proxies and Cost of Capital Measures", *Quarterly Journal of Finance*, Vol. 7, No. 2, pp. 1-33, <https://doi.org/10.1111/qjif> <http://www.worldscientific.com/loi/qjif>
- Majid, W Z.N.A., Wahab, E.A.A., Haron, H., Agustia, D., Nasih, M. (2022), "Nonaudit services, audit committee characteristics, and accruals quality in Malaysia", *Asian Journal of Accounting Research*, Vol. 7, No. 2, pp. 146-162, <https://doi.org/10.1108/AJAR-09-2020-0090>
- McInnis, J. (2010), "Earnings smoothness, average returns, and implied cost of equity capital", *The Accounting Review*, Vol. 85, No. 1, pp. 315-341. <https://doi.org/10.2308/accr.2010.85.1.315>
- McNichols, M.F. (2002), "The Quality of Accruals and Earnings: The Role of Accrual Estimation Errors: Discussion", *The Accounting Review*, Vol. 77, pp. 61-69, <https://doi.org/10.2308/accr.2002.77.s-1.61>

- Nuryaman, N. (2013), "The Influence of Earnings Management on Stock Return and the Role of Audit Quality as a Moderating Variable", *International Journal of Trade, Economics, and Finance*, pp. 73-78, 10.7763/IJTEF.2013.V4.263.
- Orazalin, N., Akhmetzhanov, R. (2019), "Earnings management, audit quality, and cost of debt: evidence from a Central Asian economy", *Managerial Auditing Journal*, Vol. 34, No. 6, pp. 696-721, 10.1108/MAJ-12-2017-1730.
- Phung, A.T., Thai, H.T.K., Nguyen, T. T. H., Nguyen, V. K. (2018). Perceived Audit Quality, Earnings Management and Cost of Debt Capital: Evidence from the Energy Listed Firms on Vietnam's Stock Market", *International Journal of Energy Economics and Policy*, Vol. 8, No. 6, pp. 120-127.
- Safdar, R., Yan, C. (2017), "Information risk, stock returns, and asset pricing: Evidence from China", *Accounting Research Journal*, Vol. 30, No. 4, pp. 379-394, <https://doi.org/10.1108/ARJ-04-2015-0057>
- Tam, PT. (2023), "Credit Support Policy Affecting the Development of the Small and Medium Enterprises Post-Covid-19 in Vietnam", *Montenegrin Journal of Economics*, Vol. 19, No. 2, <https://doi.org/10.14254/1800-5845/2023.19-2.17>
- Van V.T.T., Hung, D.N., Tram, N.N., Hoang, A.L. (2022), "Earnings quality and the cost of debt: A case study of Vietnam", *Cogent Business & Management*, Vol. 9, No. 1, pp. 1-21, <https://doi.org/10.1080/23311975.2022.2140489>.
- Vo, X. V., Chu, T. K. H. (2019), "Do foreign shareholders improve corporate earnings quality in emerging markets? Evidence from Vietnam", *Cogent Economics & Finance*, Vol. 7, No. 1, pp. 223-270, 10.1080/23322039.2019.1698940
- Widianingsih, Y.P.N., Setiawan, D., Aryani, Y.A., Gantyowati, E. (2022), "Accrual Management and Firm-Specific Risk", *International Journal of Financial Studies*, Vol. 10, No. 4, pp. 111, <https://doi.org/10.3390/ijfs10040111>
- Zhang, R., Wong, R.M.K., Tian, G., Fonseka, M.M. (2021), "Positive spillover effect and audit quality: a study of canceling China's dual audit system", *Accounting & Finance*, Vol. 61, No. 1, pp. 205-239, <https://doi.org/10.1111/acfi.12563>