

CSR DISCLOSURE AND COST OF CAPITAL : THE MEDIATING ROLE OF EARNINGS QUALITY

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Abstract

This study aims to analyze the effect of CSR disclosure on the cost of capital with earnings quality as mediating variable. CSR disclosure was measured by Global Reporting Initiative (GRI) Standards. The cost of capital was measured by the cost of equity and the cost of debt. Meanwhile, earnings quality was measured by absolute abnormal accruals. The population of this research is mining companies listed on the Indonesia Stock Exchange period 2017-2019. Based on the purposive sampling method, the samples chosen are 32 companies with a total sample of 96 data. This study used multiple linear regression analysis using SPSS 25 version software and path analysis using the Sobel online calculator. This study showed that CSR disclosure has a direct negative effect on the cost of equity but does not affect the cost of debt. Firms with better CSR disclosure have better earnings quality. Earnings quality does not affect both costs of capital proxies. Earnings quality does not have a mediating role in the effect of CSR disclosure on both costs of capital proxies.

Keywords : Cost of Capital; Cost of Debt; Cost of Equity; CSR Disclosure; Earnings Quality.

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1. INTRODUCTION

Environmental and social crises have become concerning issues in the past few decades. Those crises might negatively impact corporation earnings and Indonesian economic development in the long run (Lako, 2018:5). It is undeniable that corporations took a big part in making the crisis happened (Lako, 2018:71), especially in sectors that depend highly on natural resources.

Badan Pusat Statistik (2018) recorded that the mining sector took 91% from an overall 60.31 million tons of hazardous and toxic waste in 2017. The high amount of hazardous and toxic waste will pollute the water around the mining area. Aside from the environmental impact, mining sectors also still dealing with many social issues. For instance, Wahana Lingkungan Indonesia (2019) reported that a coal mining company in Kalimantan Timur has not yet finished the issues with post-mining area victims.

Recent issues result in the increasing demand for social and environmental disclosure among Indonesian business stakeholders (Lako, 2018:39). The government also facilitates this improvement by releasing Financial Service Authority Regulation No.51/POJK.03/2017, which requires businesses to publish their corporate social responsibility (CSR) report either through a stand-alone sustainability report or as a part of an annual report. These phenomena change the way businesses should work, as companies are now expected to not only earn revenues but also give a good impact on the environment and society (Yeh et al., 2020).

Companies' decision to disclose CSR report surely have consequences. Prior studies suggested that CSR impacts the cost of capital (COC), although the directions might vary. The rate of COC is higher for riskier projects and lower for less risky projects (Brealey *et al.*, 2017: 221). Bhuiyan and Nguyen (2019), Yeh *et al.* (2020), Suto and Takehara (2017), and Wu *et al.* (2014), through research respectively conducted in Australia, China, Japan, and Taiwan, suggested that CSR disclosure negatively impacts two significant elements of COC: the cost of equity (COE) and the cost of debt (COD). These results were in line with the signaling theory. CSR disclosure indicates that the company is committed to environmental and social issues, which will provide information to investors that the risk of loss due to conflict with society can be avoided. According to the risk mitigation approach, reduced risk will make the investors lower their expected rate of return so that the COC will decrease (Jo and Na, 2012; Goss and Roberts, 2011 in Bhuiyan and Nguyen, 2019).

Feng *et al.* (2015), on the other hand, through research conducted in the Asia-Pacific, suggested that CSR disclosure positively impacts the COE. On research conducted in Europe, Izzo and Magnanelli (2017) suggested that companies with a higher CSR reporting level tend to have a high COD. These studies are in line with agency theory. CSR can enhance the company's reputation while also enhancing the manager's personal reputation. Therefore, managers take advantage of this opportunity to over-invest in CSR for their personal profit. It makes CSR activities have high costs but with inefficient management. Investors might consider CSR a bad signal because CSR is

considered an added cost that will eventually reduce firm value. Hence, investors will increase their expected return as a punishment for manager's behavior (Barnea and Rubin 2010; Goss and Roberts, 2011 in Bhuiyan and Nguyen, 2019).

The different directions of prior studies motivate this study to add another variable that will possibly influence the effect of CSR disclosure on the COC. This study predicts earnings quality (EQ) as a mediating variable of the CSR effect on COC. CSR disclosure does not automatically make investors are interested in investing in a company. However, CSR disclosure is a sign that the company is committed to its social responsibility and ethical behavior.

Bhuiyan and Nguyen (2019) argue that CSR disclosure could reduce COC by increasing the EQ. Choi *et al.* (2013) suggested that firms that commit more to CSR or ethical behavior provide broader information disclosure and less involved in earnings management. In these firms, the profits shown in financial statements are actual profits with minimum manipulation. Kim *et al.* (2012) supported this statement by proving a negative correlation between CSR and EQ proxied by absolute abnormal accruals, further proving that firms with broader CSR reports were less involved in earnings management, thus producing better earnings quality. Wu *et al.* (2014) find that companies with a broader CSR disclosure and a better EQ have lower COC levels. These results suggest the possibility of the EQ as a mediator between CSR and COC. However, it is yet to be proven that EQ acts as a mediator between CSR and COC. Hence, this study will analyze it.

Prior studies mentioned above use absolute abnormal accruals to measure EQ. Absolute abnormal accruals is the reflection of management reporting choice. This measure was formulated based on the assumption that managers could manipulate earnings through account receivable, as it is easier to manage than if companies recognize cash sales (Persakis and Iatridis, 2017). The higher absolute abnormal accruals level shows a lower earnings quality. It is relevant to mention because both CSR and absolute abnormal accruals rely on management reporting choice.

This research has several goals. First, we want to examine the impact of corporate social responsibility disclosure (CSRSD) on the cost of capital. Second, we investigate the effect of CSR disclosure on earnings quality (EQ). Third, we inspect the influence of EQ on COC. Further, we examine whether earnings quality mediates the effect of CSRSD on COC. We focus this study on the mining sector because the mining sector is highly dependent on natural resources. Natural resources-based industries are obliged to do social and environmental responsibility under Law No.40/2007 articles 66 and 74. As explained in the earlier paragraphs, the mining sector is also a sector with high environmental and social risk. PwC (2018) also stated that the mining sector needs a high early investment with a long payback period due to its high-costed capital-intensive characteristic. Hence, we conclude that the mining sector is the most relevant sector to conduct this study.

We proved that better CSRSD might reduce COE but does not affect COD. Firms with better CSRSD tend to have better EQ as reflected in the decreasing rate of

discretionary accruals. EQ did not affect COC. EQ did not mediate the effect of CSRD on COC in Indonesian mining companies. Our research contributes to the literature in several ways. First, as far as we know, our study is the first one to use EQ as a mediating variable. We give a new insight into this matter as prior studies did not test the mediating role of EQ on CSR disclosure and COC's relationship. We also use the behavioral agency model to explain why firms might have better CSRD and EQ. Our study contributes to the development of agency and signaling theory in the specific context of Indonesian mining sector. Meanwhile, the other studies use more general view as they do not distinguish the characteristic of stakeholders in various sectors and countries.

2. LITERATURE REVIEW

Agency Theory

Agency theory that will be described in this research are information asymmetry as the cause of agency problem and behavioral agency model as the motivation of agent to make decision. Information asymmetry happened due to the different level of knowledge about the firm that management (agent) and investors (principal) have. Managers operate the business of the firm and know all the firm's information, while investor depend on managers to get the firm's information. Hence, the firm's information may not fully be delivered to the owners (Panda and Leepsa, 2017). Information asymmetry is the reason why a better CSR disclosure and earnings quality are needed.

Behavioral agency model explains the motivation of managers to disclose a better CSR reporting and do less earnings management. Behavioral agency model stated that prospects for future firm performance impact the wealth of managers. Hence, if the firm performance is predicted to be good, managers will act conservatively in order to get positive gain to personal wealth. Whereas, if the firm performance is predicted to be bad, managers will take greater risky strategy in order to minimize the loss as much as possible (Wiseman and Gomez-Mejia, 1998). In the context of this study, forecast of the firm performance is satisfactory (good) because CSR is predicted to benefit the firms.

Signaling Theory

Signaling theory discusses how management should report the success or failure of the company to investors. Motivation to send signals arises from information asymmetry between the company and investors, where investors get the company's internal information relatively less and slower than the management (Brigham and Houston, 2019: 500). Signaling theory explains the role of disclosure as a solution of information asymmetry.

There are four elements of signaling theory. The signaler, the signal, the signal receiver, and the feedback. The signaling theory process begins with the actions taken by the management (signaler) to communicate positive and invisible management qualities intentionally. The signal is then received by the investors (signal receiver) so that

investors and management get the same information. After the information accepted, investors will respond (feedback) in the form of decision making (Connelly, 2011).

The signals that will be discussed in this study are CSR disclosure as non-financial information and earnings quality as financial information. The signal receiver is the investors, while the feedback is the COC level that investors give to the company.

Hypothesis Development

The Direct Effect of CSR Disclosure on Cost of Capital

Agency theory explained the problem of information asymmetry between the management and investors. Managers are more informed about the firm's condition than the investor. The risk of information asymmetry will make the market give higher COC as nondisclosure is likely to be interpreted as bad news (Francis *et al.*, 2008). CSR disclosure can reduce information asymmetry based on signaling theory because more disclosure means more information accessible for the public. CSR can act as a signal that provides information for investors to make decisions. The decision is related to whether they will invest and how much return they expect (Yeh *et al.*, 2020).

CSR as a signal indicates a cooperation of informations concerning the government, business, and society, given to investors (Michael, 2003 in Yeh *et al.*, 2020). CSR disclosure shows the company focuses not only on gaining profit but also on its relationship with investors in the future (Gelb and Strawser, 2001 in Choi *et al.*, 2013).

El Ghouli *et al.* (2011) explained that CSR could reduce COC for enterprises through information transmission. The information transmission will eventually reduce information asymmetry and investment risk. CSR can be considered an effective mechanism to make potential investors commit correct investment decisions and effectively scale down their COC. CSR is a good signal that will reduce the firm's investment risk. The reduction of risk occurs because CSR activities involve companies' concern towards social and environmental aspects, which will reduce the risk of social conflicts and environmental sanctions. Thus, the reduction in risk makes the investor reduce the amount the payment they need (Dhaliwal *et al.*, 2014). If investors reduce the required return, then the company's COE and COD will be lower.

Banks will also charge lower COD to companies with more CSR disclosure because they believe CSR disclosure could reduce uncertainty caused by information asymmetry and controversial company reputation (Yeh *et al.*, 2020). El Ghouli *et al.* (2011) argue that investors with a high social and environmental awareness will choose not to invest in companies with low CSR disclosure, which will result in pollutant companies have fewer investors.

Empirical studies conducted by Bhuiyan and Nguyen (2019), Wu *et al.* (2014), Dhaliwal *et al.* (2014), El Ghouli *et al.* (2011), Feng *et al.* (2015) show a negative relationship between CSR disclosure and COE. Yeh *et al.* (2020), Bhuiyan and Nguyen (2019) find a negative relationship between CSR disclosure and COD. Based on the prior studies and explanation, we propose the following hypothesis:

H_{1a}: CSR disclosure negatively affects COE

H_{1b}: CSR disclosure negatively affects COD

The Effect of CSR Disclosure on The Earnings Quality

The behavioral agency model explains the relationship between CSR disclosure and EQ. The behavioral agency model stated that prospects for future firm performance impact the wealth of managers. Hence, if the firm performance is predicted to be good, managers will act conservatively to get positive gain to personal wealth (Wiseman and Gomez-Mejia, 1998). Managers will be credited if the firm performance increased because they are responsible to look after the firm. The increase in firm performance might guarantee more incentives for the managers. Prior studies (Bhuiyan and Nguyen, 2019; Wu *et al.*, 2014; Dhaliwal *et al.*, 2014; El Ghouli *et al.*, 2011) suggested that CSR will benefit the company in form of a lower rate of COC. As companies might get benefit from CSR disclosure, managers are expected to act conservatively. The conservatism will constrain opportunistic earnings management that will lead to the increase of earnings quality (Watts, 2003 in Ewert and Wagenhofer, 2011).

Kim *et al.* (2012) argue that managers have a higher standard of behavior because they have incentives to be morally correct in their business process. Therefore, managers who engage in CSR due to moral concern tend to engage less in earnings management as they are more likely to maintain financial transparency to make responsible operating decisions. The conservatism of managers and the lack of earnings management are expected to increase the firm's earnings quality. Choi *et al.* (2013), Wu *et al.* (2014), Kim *et al.* (2012), and Kumala and Siregar (2019) find that companies with better CSR disclosure tend to have a better earnings quality. We will follow those studies to use absolute abnormal accruals as the measure of earnings quality. Higher absolute abnormal accruals reflect a lower earnings quality. Based on the prior studies and explanation, we propose the following hypothesis:

H₂: Firms with better CSR disclosure have better earnings quality

The Effect of Earnings Quality on The Cost of Capital

The problem between EQ and COC could also be explained by the agency theory. Agency theory describes a possible conflict of interest and information asymmetry between the managers (agent) and the investors (principal). EQ in this research is measured by absolute abnormal accruals which reflect the management reporting choice. Higher absolute abnormal accruals indicate a lower EQ, as it showed that earnings are more likely to be manipulated by the managers. However, the lower absolute abnormal accruals indicate a better EQ (Francis *et al.*, 2006). In this context, a better EQ is described as a better quality of financial information. The higher earnings quality indicates better transparency (da Silva and Nardi, 2017) and more accurate information quality (Carmo *et al.*, 2016).

Persakis and Iatridis (2017) prove that the company with better EQ has lower COE and COD in the Eurozone and lower COE in Asia. Carmo *et al.* (2016) explained that EQ

is negatively affecting COD because banks consider companies with better EQ have less possibility to report financial information inaccurately. Da Silva and Nardi (2017) argue that a company with better EQ has lower COE because an increasing EQ level equals an increasing financial information quality. The increasing level of information quality will result in a lower rate of information asymmetry. Thus, the investors will lower their required rate of return due to the lower information risk.

H_{3a}: Firms with higher EQ have lower rate of COE

H_{3b}: Firms with higher EQ have lower rate of COD

The Indirect Effect of CSR Disclosure on The Cost of Capital through The Earnings Quality

Baron and Kenny (1986) stated that a variable could be considered a mediating variable only if it fulfills several conditions. Firstly, the independent variable significantly affects the mediating variable. Secondly, the independent variable significantly affects the dependent variable. Lastly, when the mediating variable controls the independent variable's effect on the dependent variable, the result becomes lower or insignificant.

Two hypotheses above (H₂ and H₃) show that the first and second conditions have been fulfilled. First, we propose that CSR as an independent variable might improve EQ as mediating variable. This statement was supported by prior studies and behavioral agency theory. Choi *et al.* (2013), Kim *et al.* (2012), Wu *et al.* (2014), Kumala and Siregar (2019) find that firms with higher CSR disclosure have a higher EQ. The behavioral agency model argues that the possible benefit of CSR might motivate managers to act conservatively to gain personal benefit because the prospects for future firm performance impact the wealth of managers (Wiseman and Gomez-Mejia, 1998). Therefore, managers will engage less in opportunistic earnings management that will lead to the increase of EQ (Watts, 2003 in Ewert and Wagenhofer, 2011).

Second, we propose that EQ as mediating variable might lower the level of COC as the dependent variable. This statement was supported by prior studies and agency theory. Persakis and Iatridis (2017), Carmo *et al.* (2016), da Silva and Nardi (2017) argue that a company with better EQ has lower COC. Agency theory explains how EQ will lower the level of COC. A better EQ indicates fewer earnings management, which will lead to better transparency (da Silva and Nardi, 2017) and more accurate information quality (Carmo *et al.*, 2016). The increasing level of information quality will result in a lower rate of information asymmetry. Thus, the investors will lower their required rate of return due to the lower information risk.

Those explanations show there is a correlation between CSR and EQ as well as a correlation between EQ and COC. Francis *et al.* (2008) find that CSR's effect on COC might be lower or disappear when we take EQ into account, which indicates the fulfillment of the third mediating variable requirements. Bhuiyan and Nguyen (2019) suggest that CSR will lower COC through EQ. The explanations and prior studies above indicate that EQ might become the mediator of CSR and COC relationships. This study

will test the hypothesis by using the Sobel test. Hence, we propose the following hypothesis:

H_{4a}: EQ mediates the effect of CSR disclosure on COE

H_{4b}: EQ mediates the effect of CSR disclosure on COD

Research Framework

Figure 1 describes the research framework of this study. H₁ is the direct effect of CSR on COC. H₂ is the effect of CSR on EQ. H₃ is the effect of EQ on COC. H₄ shows the indirect impact of CSR on COC through EQ.

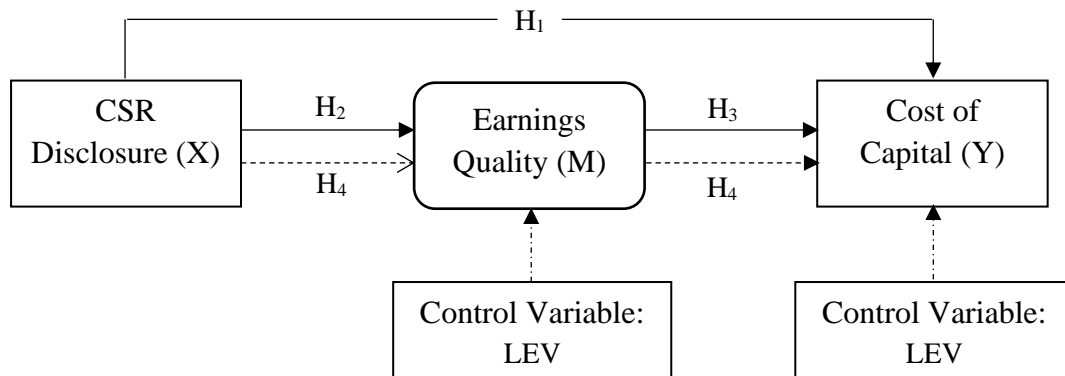


Figure 1.

Research Framework

(Source: Developed by the authors, 2021)

Note:

—→: Direct impact

-----→: Indirect impact

-----→: Control variables

3. METHODOLOGY

Population and Samples

We use the mining companies as the population of this study. We choose this sector because it is a natural resources-based industry that is obliged to do social and environmental responsibility according to Law No.40/2007 article 66 and 74. The mining sector is also a high-costed capital-intensive sector, which makes it relevant to conduct a cost of capital research.

We set several sample criteria. Firstly, the samples need to be listed on the Indonesia Stock Exchange period 2013-2019. We choose the year 2013 as the starting year because the timeframe required for market data to calculate the COE variable is five years, so data from 2013 is needed to calculate COE for 2017. Secondly, companies must publish annual reports from 2017-2019 and fulfill all the data requirements. This criterion

is determined because consecutive data are needed to calculate the earnings quality variable. We choose the 2017-2019 reporting period because it is the most recent data available and is expected to portray the mining sector's current state accurately. Our data sources are idx.com, finance.yahoo.com, and each company's website.

Variable Measurements

Cost of Equity

We use the capital asset pricing model (CAPM) to measure COE. This measure was also used by prior research such as Francis *et al.* (2005), Yeh *et al.* (2020), and Bhuiyan and Nguyen (2019). We choose the CAPM because it is the most common model to measure COE (Brigham dan Houston, 2019:364) and not limited to constant dividend growth so that this measure could be applied to a broader environment (Murwaningsari, 2012). The CAPM is formulated as follows:

$$\text{COE} = R_t^f + \beta (R_t^m - R_t^f)$$

Where:

R_t^f = risk free rate in year t

R_t^m = market return in year t

β = systematic risk

Cost of Debt

We use realized cost of debt to measure COD. This measure was also used by prior research such as Francis *et al.* (2005) and Yeh *et al.* (2020). The COD is formulated as follows:

$$\text{COD} = \frac{\text{interest expense}_t}{\text{Interest bearing debt outstanding}_t}$$

CSR Disclosure

We use the content analysis technique by indexing annual reports and sustainability reports to measure CSR. The index to measure the CSR report is Global Reporting Initiative (GRI) Standards that contains 77 items, consisting of 13 economic disclosure, 30 environmental disclosure, and 34 social disclosure. This method is commonly used in Indonesia because there is no publicly available data regarding the CSR disclosure level (Hajawiyah and Hermawan, 2019). This measure was also used by prior research such as Kumala and Siregar (2019) and Hajawiyah and Hermawan, 2019. The CSR Disclosure is formulated as follows:

$$\text{CSR D} = \frac{\text{Number of items disclosed}}{\text{Number of items should be disclosed}}$$

Earnings Quality

We use absolute abnormal accruals using Dechow (1995) model to measure earnings quality. This measure was also used by prior research such as Francis *et al.*

(2004), Francis *et al.* (2008), Kim *et al.* (2012), Choi *et al.* (2013), and Persakis and Iatridis (2017). We choose this measure because it is proven to show a significant market effect (Francis *et al.*, 2004) that would be relevant for this research since we use market data to measure COE. Absolute abnormal accruals is formulated with the following steps:

Calculating the total accruals

$$TA_{it} = NI_{it} - CFO_{it} \quad (1)$$

Where:

TA_{it} = total accruals in year t

NI_{it} = net income in year t

CFO_{it} = cash flow from operation in year t

Estimating the value of total accruals with Ordinary Least Square regression

$$\frac{TA_{it}}{A_{it-1}} = \beta_1 \frac{1}{A_{it-1}} + \beta_2 \frac{\Delta REV_{it}}{A_{it-1}} + \beta_3 \frac{GPPE_{it}}{A_{it-1}} + \varepsilon_{it} \quad (2)$$

Where:

TA_{it} = total accruals in year t

A_{it-1} = net income in year t

ΔREV_{it} = change in revenue in year t

$GPPE_{it}$ = gross property, plant, and equipment in year t

$\beta_1, \beta_2, \beta_3$ = regression coefficient

ε_{it} = standard error

Calculating the normal accruals

$$NA_{it} = \beta_1 \frac{1}{A_{it-1}} + \beta_2 \frac{\Delta REV_{it} - \Delta AR_{it}}{A_{it-1}} + \beta_3 \frac{GPPE_{it}}{A_{it-1}} \quad (3)$$

Where:

ΔAR_{it} = change in account receivable in year t

Calculating the absolute abnormal accruals

$$|AA_{it}| = \frac{TA_{it}}{A_{it-1}} - NA_{it} \quad (4)$$

A higher $|AA_{it}|$ shows a lower EQ level.

Control Variable

We use leverage as the control variable. Companies with a higher leverage ratio tend to manage earnings more to avoid debt agreement violation (Kumala and Siregar, 2019), which will result in a higher COC level (Bhuiyan and Nguyen, 2019). Leverage is predicted to affect EQ and COC positively. Leverage is formulated as follows:

$$LEV = \frac{\text{Total liabilities}}{\text{Total assets}}$$

Research Models

This research uses multiple linear regression and path analysis to test the research hypothesis. We formulate the multiple linear regression as follows:

$$EQ = \alpha + \beta_1 CSR D + \beta_2 LEV + \varepsilon \quad (1)$$

$$COE = \alpha + \beta_3 CSR D + \beta_4 EQ + \beta_5 LEV + \varepsilon \quad (2)$$

$$COD = \alpha + \beta_6 CSR D + \beta_7 EQ + \beta_8 LEV + \varepsilon \quad (3)$$

The direct impact of CSR D on COE (H_{1a}) is tested using the equations (2), while the direct impact of CSR D on COD (H_{1b}) is tested using the equations (3). Hypothesis H_{1a} and H_{1b} are accepted if β_3 and β_6 have negative values with the significance level of $< 0,05$. The

The CSR D effect on EQ (H_2) is examined using the equations (1). The EQ impact on the COE (H_{3a}) is tested using equations (2), whereas the EQ impact on the COD (H_{3b}) is tested using equations (3). These hypotheses are also used to test the requirements of mediating variable. The EQ passed the mediating variable requirements if β_1 , β_8 , and β_{11} have negative values with the significance level of $< 0,05$. Further, we conduct path analysis using Sobel online calculator to test the indirect impact of CSR D on COC through EQ.

The Sobel test is conducted by testing the indirect effect of the CSR disclosure (X) on the cost of capital (Y) through the earnings quality as the mediating variable (M). The indirect effect of CSR D to COC through EQ is calculated by multiplying the CSR D - EQ (a) path by the EQ - COE (b) path or ab paths. Hence, the coefficient $ab = (c - c^1)$, where c is the effect of CSR D on COC without controlling EQ, while c^1 is the coefficient of the CSR D impact on COC after controlling EQ. The standard error of the coefficients a and b is written as Sa and Sb and the indirect standard error is Sab (Ghozali, 2013: 248-255).

The equation (1) is the path (a), while the equation (2) is the path (b_1) and equation (3) is the path (b_2). Hypothesis H_{4a} and H_{4b} are accepted if the Sobel online test statistic results are $\geq 1,96$ on the significance level of $< 0,05$.

4. RESULTS AND DISCUSSION

Sample Selection

This research use mining companies listed in Indonesia Stock Exchange from 2017-2019 as the sample. The result of purposive sampling obtained a total 32 companies with total observations of 96 firm years. Sample selecting procedure is described in Table 1.

Table 1
Sample Selection

Criteria	Total
Mining companies listed on Indonesia Stock Exchange	47
Companies listed after 2013	(11)
Companies that are not completing the required data	(4)
Qualified companies	32
Qualified companies in three years observation (2017-2019)	96

Source : Processed Secondary Data (2021)

Descriptive Statistics

The descriptive statistics describe the summary of all variables. We use the help of SPSS 25 version software to analyse the data. The descriptive statistics can be seen in the Table 2.

Table 2
Descriptive Statistics

Variables	Minimum	Maximum	Mean	SD
CSR	0.05195	0.70130	0.2477005	0.14238092
COE	0.00352	0.12933	0.0546420	0.02246133
COD	0.00016	0.19057	0.0636331	0.03602942
EQ	0.00004	0.34108	0.0703096	0.06418448
LEV	0.13000	1.29200	0.5720229	0.23656840

Source : Processed Secondary Data by SPSS 25 (2021)

The average value of the independent variable, CSR, is 0.2477005, while the highest value is 0.70130 (PT Perdana Karya Perkasa Tbk on 2017 and 2018), and the lowest value is 0.05195 (PT Adaro Energy Tbk on 2019). This research use COE and COD as proxies of COC. COE has a mean value of 0.0546420, with the maximum value of 0.12933 (PT Indika Energy Tbk on 2019), and the minimum value of 0.00352 (PT TBS Energi Utama Tbk on 2017). Meanwhile, COD has a mean value of 0.0636331, while the highest value is 0.19057 (PT Central Omega Resources Tbk on 2017), and the lowest value is 0.00016 (PT Baramulti Suksessarana Tbk on 2017). The mean value of the mediating variable, EQ, is 0.0703096, which ranges from 0.00004 (PT Bumi Resources Minerals Tbk on 2019) to 0.34108 (PT Ratu Prabu Energi Tbk on 2019). The control variable, LEV, has the mean value of 0.5720229 with 1.29200 (PT Vale Indonesia Tbk on 2019) as the maximum value and 0.13000 (PT Apexindo Pratama Duta Tbk on 2018) as the minimum value. The standard deviation of CSR, COE, COD, EQ, and LEV respectively are 0.14238092, 0.02246133, 0.03602942, 0.06418448, 0.23656840. The standard deviations of all variables are lower than the mean value, which indicates that all variables have fewer fluctuating data.

Regression Results

We have three regression models to test the hypothesis. Equation (2) is used to test H_{1a} and H_{3a}, equation (3) is used to test H_{1b} and H_{3b}. Meanwhile, H₂ is examined using the equation (1). Before doing the regression test, we conducted classical assumption tests to ensure all models are free from classical assumption bias. It consists of the normality test using Kolmogorov-Smirnov, autocorrelation test using Durbin-Watson, multicollinearity test using variance inflation factor, and heteroscedasticity test using Glejser. All models passed the classical assumption test except equation (1), which did not pass the normality test. We did the square root transformation data to solve this problem. Therefore, the transformed equation (1) is formulated as follows:

$$\text{SQRT_EQ} = \alpha + \beta_1\text{SQRT_CSR} + \beta_2\text{SQRT_LEV} + \varepsilon$$

We conducted multiple regression analysis using SPSS 25 version software after all the research models passed the classical assumption test. The summary of the regression results was presented in Table 3.

Table 3
Regression Results

Variables	SQRT_EQ (Model 1)	COE (Model 2)	COD (Model 3)
SQRT_CSRD	-0.189 (0.029)**	-	-
SQRT_LEV	0.139 (0.058)*	-	-
CSR	-	-0.037 (0.028)**	0.009 (0.722)
EQ	-	0.022 (0.552)	-0.064 (0.276)
LEV	-	-0.014 (0.147)	0.040 (0.014)**
N	96	96	96
Adjusted R ²	0.083	0.040	0.040
F-statistic	5.287	2.321	2.314
F-sig.	0.007**	0.080*	0.081*

Note: Numbers with ** and * sign indicate the statistical significance at 5% and 10%, respectively. The t-statistics value are presented above the numbers with parentheses.

Source : Processed Secondary Data by SPSS 25 (2021)

The adjusted R-Square values in all models are 0.083, 0.040, and 0.040, respectively, which means that the independent variables affect the dependent variable respectively by 8.3%, 4%, and 4% while other variables influence the rest.

The simultaneous effect test (F test) significance values for all models respectively are 0.007, 0.080, and 0.081. These values are less than 0.05 in model 1, while in model 2 and 3, the values are less than 0.10. It shows that all research models are fit and could explain the independent variables' effect on the dependent variable.

The Direct Effect of CSRD on COC

The direct effect test is conducted using equation (2) for H_{1a} and equation (3) for H_{1b} . Based on Table 3, the result of the partial effect test (t-test) in model 2 shows the CSRD has a coefficient β_3 of -0.037 with a significance level of 0.028 (below the 0.05 significance level). The control variable, LEV, has a β_5 coefficient of -0.014 with a significance level of 0.147 (above the 0.05 significance level). This result proves that CSRD negatively influences the COE. LEV does not affect COE. Hence, it could be concluded that **hypothesis (H_{1a}) is accepted.**

Based on the signaling theory, companies publish information through CSR to show that the company is committed to social and environmental issues, thus providing information to stakeholders that the risk of loss caused by the environmental damage and conflict with the community could be avoided. According to the risk mitigation approach, reduced risk will make investors reduce the level of expected return so that COC will decrease (Jo and Na, 2012; Goss and Roberts, 2011 in Bhuiyan and Nguyen, 2019).

CSRD in this study proved to affect COE negatively. It shows that investors perceive more CSR disclosure as a good signal and provide lower COE as the feedback on these signals. The results of this study are in line with signaling theory and previous research conducted by Bhuiyan and Nguyen (2019), Wu *et al.* (2014), Dhaliwal *et al.* (2014), El Ghouli *et al.* (2011), Feng *et al.* (2015), Hajawiyah and Hermawan (2019).

The result of the partial effect test (t-test) in model 3 shows that the CSRD variable has a β_6 coefficient of 0.009 with a significance level of 0.722 (above the 0.05 significance level). As the control variable, LEV has a β_8 coefficient of 0.040 with a significance level of 0.014 (below the 0.05 significance level). It proves that CSRD does not influence COD. LEV has a significant positive effect on COD. So, we could conclude that **hypothesis (H_{1b}) is rejected.**

CSRD in this study is not proven to affect COD. It shows that banks and other creditors do not perceive CSR information as a signal that will motivate them to lower the interest rates. Lenders do not have a social agenda to promote, but they are interested in getting back the money they have lent (Goss and Roberts, 2011 in Suto and Takehara, 2017). The bank does not consider social and environmental risks significant because companies' responsibility towards the bank is limited to paying their debts. This study's result is in line with the research of Suto and Takehara (2017), Hajiha and Sarfaraz (2013), Hajawiyah and Hermawan (2019).

This study's result is also consistent with conditions in Indonesia, where the determinant factors for credit interest rates according to the Financial Service Authority Letter No.34/SEOJK.03/2017 are the prime lending rate and the estimated risk premium. The prime lending rate is determined by calculating the cost of lending funds, bank overhead costs, and the bank's profit margin. The prime lending rate is determined based on the bank's internal decision, which is not influenced by the prospective debtor's condition. Meanwhile, the estimated risk premium is the bank's assessment of each debtor, which depends on the debtor's condition. However, the CSR disclosure is not one of the risks that banks consider. One of the risks that banks consider is the company's

leverage level, which is the company's ability to fulfill its financial obligations. This statement is also consistent with our findings where the leverage ratio positively affects COD, which means that the higher the level of leverage results in the higher interest rate.

The Effect of CSR on EQ

We formulated H_2 as the required test of mediating variable. EQ will pass the first requirement of mediating variable if H_2 is accepted. We use equation (1) to test H_2 . The regression result was shown in Table 3. In model 1, the β_1 coefficient for the CSR is -0.189, with a significance level of 0.029 (below the 0.050 significance level). LEV has the β_2 coefficient of 0.139, with a significance level of 0.058 (below the 0.10 significance level). These results prove that there is a significant negative effect of CSR on EQ, and LEV positively affects EQ. This result shows that EQ passed the first requirement of mediating variable. So, it can be concluded that **hypothesis (H_2) is accepted.**

This study proves that CSR negatively affects abnormal accruals, meaning that companies with more CSR disclosure have better earnings quality (EQ). This result is in line with the prior research conducted by Choi *et al.* (2013), Kim *et al.* (2012), and Kumala and Siregar (2019). EQ proxied by abnormal accruals reflects management's reporting choice. Managers who disclose more CSR tend to have a better EQ because they are less involved in earnings management. So that in these companies, the profit shown in the financial statements is the real profit with minimum manipulation. This result is also in line with the behavioral agency theory. The satisfactory (good) condition of the firm's performance will make the managers act in favor of the firm because the future firm performance impacts the wealth of managers (Wiseman and Gomez-Mejia, 1998). CSR is proven to benefit the company and motivate the managers to disclose more accurate financial reporting.

The Effect of EQ on COC

The second requirement of mediating variable is that EQ as mediating variable needs to impact COC as the dependent variable. We formulated this requirement into H_{3a} and H_{3b} . We use equation (2) to test H_{3a} and equation (3) to test H_{3b} . Based on Table 3, EQ in the model (2) has a β_4 coefficient of 0.022 with a significance level of 0.552 (above the 0.050 significance level). It proves that there is no significant effect of EQ on COE. Hence, it can be concluded that EQ on COE does not meet the mediating variable's second requirement. **Hypothesis (H_{3a}) is rejected.**

Table 3 shows that EQ in the model (3) has a β_7 coefficient of -0.064, with a significance level of 0.276 (above the 0.050 significance level). This result proves that there is no significant effect of EQ on COD. Therefore, it can be concluded that EQ on COD also does not meet the mediating variable's second requirement. **Hypothesis (H_{3b}) is rejected.**

Our results show that both shareholders and creditors have the same view regarding how they perceive the company's EQ. This finding is in line with Eliwa *et al.* (2016), who stated that abnormal accruals have a negligible or insignificant effect on COC. It

shows that shareholders and creditors do not consider the discretionary factor to be significant. They are more concerned about innate factors (business model and operating environment risks) than discretionary factors (risks of manager's reporting choice). Shareholders and creditors consider the information risk of the manager's reporting choices to be less important than the risk that reflects business operations (Eliwa *et al.*, 2016).

This result is also consistent with the conditions of the mining sector in Indonesia. The innate factors that include the risk of business operations and the business environment in Indonesian mining companies are very high, so managers' reporting choice risks could be ignored. These risks relate to Indonesia's very rigid regulations on mining, making it difficult for the investment climate to develop. For instance, the regulation to set coal prices such as Government Regulations No.8/2018, Minister of Energy and Mineral Resources Regulation No.19/2018, and Minister of Energy and Mineral Resources Decree No.1395 K/30/MEN/2018. These regulations explain that the Ministry of Energy and Mineral Resources could determine the price of coal supplied specifically to meet domestic needs. This regulation is implemented by considering the purchasing power of domestic companies, but on the other hand, it is not very profitable for the mining sector's investment climate (PWC Indonesia, 2018). Besides, Government Regulations No.1/2017 and Ministry of Energy and Mineral Resources Regulation No.9/2017 requires foreign investors to divest, so the maximum investment limit is 49% of the company's total shares. It caused overseas investors to sell their operations to local stakeholders and discourages new foreign investment.

As a result, the funds available for industrial development have decreased, especially funds for exploration (PWC Indonesia, 2018). In terms of operational risk, mining companies also need more funds for supporting infrastructures such as energy, roads, and ports. The inadequate infrastructure in Indonesia makes investors have to pay more to fund supporting infrastructure. The high cost of supporting infrastructure, which is a fixed cost, will affect the profits. If sales are reduced just a little, it will significantly reduce the current year's profit. Also, mining commodity prices have fallen since 2012, which has resulted in mining company profits continuing to decline. It has resulted in the company currently focusing more on cutting operating expenses and focusing more on minerals that are easier to mine than increasing production and development. These operational risks make the investment climate stagnant (PWC Indonesia, 2018).

The Indirect Effect of CSRD on COC through EQ

This research use path analysis to test the indirect effect hypothesis. Furthermore, the Sobel test was conducted with the Sobel online calculator to determine the significance of the mediating variable's impact on the effect of CSRD on COE (H_{4a}) and the effect of CSRD on COD (H_{4b}). We calculate the regression coefficient of the path (a) and path (b) as well as the standard error of path (a) and path (b) to conduct the Sobel test. Path (b) has two proxies, (b_1) for COE and (b_2) for COD. The path regression test results are shown in Table 4.

Table 4
Path Regression Results

Variables	Path (a)	Path (b ₁)	Path (b ₂)
	EQ	COE	COD
CSR	-0.189	-	-
EQ	-	0.022	-0.064
Standard error	0.085	0.036	0.058
Sobel Test Results		-0.5892	0.9884

Source: Processed Secondary Data by SPSS 25 (2021) and danielsoper.com (2021)

H_{4a} hypothesis testing is done by conducting the Sobel test on the path (a) and path (b₁). Table 4 shows the CSR variable on path (a) has a beta coefficient of -0.189 with a standard error of 0.085. The EQ variable on the path (b₁) has a beta coefficient of 0.022 with a standard error of 0.036. Hence, the Sobel test statistic result is -0.5892. The result indicates a value of $-0.5892 < 1.96$, which means that the EQ variable does not mediate CSR and COE's relationship. So, it can be concluded that **hypothesis (H_{2a}) is rejected**.

H_{4b} hypothesis testing is done by performing the Sobel test on the path (a) and path (b₂). Table 4 shows the CSR variable on path (a) has a beta coefficient of -0.189 with a standard error of 0.085. The EQ variable on the path (b₂) has a beta coefficient of -0.064 with a standard error of 0.058. Therefore, the Sobel test statistic result is 0.9884. The result indicates a value of $0.9884 < 1.96$, which means that the EQ variable does not mediate CSR and COD's relationship. So, it can be concluded that **hypothesis (H_{2b}) is rejected**.

This result, unfortunately, did not prove that EQ mediates the relationship between CSR and COC. The reason is that the second requirement is not fulfilled. EQ did not affect both proxies of COC hence EQ could not mediate the relationship between CSR and COC. This study explains that for investors, CSR might affect their decision to set the required rate of return. CSR reflects the firm's sense of responsibility to not only earn revenues but also give a good impact on the environment and society (Yeh *et al.*, 2020). However, the increase of EQ is not the reason why investors consider CSR as an added value. Eliwa *et al.* (2016) stated that abnormal accruals have a negligible or insignificant effect on COC. Manager's reporting choice of financial information is considered less important in the Indonesian mining sector because the risk of business operations and the business environment in this sector are more dominant. Therefore, CSR might show you that the managers are more ethical but investors did not expect a better earnings quality when they demand more CSR disclosure. This possibly happens because the investors are concerned with the sustainability of the firm. It is proven by how recent environmental and social issues motivate the investors to demand more social and environmental disclosure (Lako, 2018:39)

Our findings in the context of banks and lenders show that neither CSR nor EQ affects the decision-making of banks to decide the loan's interest. In the Indonesian case, government regulations have a dominant role to decide the rate of credit interest. Financial Service Authority Letter No.34/SEOJK.03/2017 regulates that the

determinants of credit interest rate are the prime lending rate and the estimated risk premium. The prime lending rate relies on the bank's internal decision, while the estimated risk premium depends on the prospective debtor's condition. Lenders do not consider CSR and EQ as the risk premium because their only interest is to get their money back (Goss and Roberts, 2011 in Suto and Takehara, 2017), which has nothing to do with the CSR and the level of manager's reporting choice. This statement is also supported by our findings that leverage ratio positively affects COD as leverage show a company's ability to fulfill their financial obligations. Our study suggests that the bank's decision to rate the credit interest mainly relies on the company's ability to pay off their debts and hardly got influenced by better disclosure.

5. CONCLUSIONS, IMPLICATIONS, AND LIMITATIONS

Conclusions

This research aims to examine the impact of corporate social responsibility disclosure (CSR) on the cost of capital proxied by the cost of equity and cost of debt. Then, we test the effect of CSR disclosure on earnings quality (EQ). We also inspect the influence of EQ on COC. Further, this study examines whether earnings quality mediates the effect of CSR on the cost of capital. The results obtained show that CSR negatively affects the cost of equity. This result is consistent with signaling theory and previous research conducted by Bhuiyan and Nguyen (2019), Wu *et al.* (2014), Dhaliwal *et al.* (2014), El Ghouli *et al.* (2011), Feng *et al.* (2015), Hajawiyah and Hermawan (2019). However, we find that CSR does not affect the cost of debt. This result is not in line with our hypothesis, but it is in line with prior studies conducted by Suto and Takehara (2017), Hajiha and Sarfaraz (2013), Hajawiyah and Hermawan (2019). Our result regarding CSR's effect on the cost of debt is also in line with the Financial Service Authority Letter No.34/SEOJK.03/2017, which implied that CSR is not part of bank consideration for determining the interest rate.

Further, we find that CSR negatively affects earnings quality proxied by absolute abnormal accruals, meaning that companies who disclose CSR tend to have a better earnings quality. This result is in line with behavioral agency theory and prior research conducted by Choi *et al.* (2013), Kim *et al.* (2012), and Kumala and Siregar (2019). However, this study does not prove that earnings quality affects both costs of capital proxies. It is in line with Eliwa *et al.* (2016). Eliwa *et al.* (2016) argue that the abnormal accruals are insignificant risk factors compared to the innate accruals. It is also in line with PwC (2018) that the Indonesian mining sector's business environment and operational risk are high so the manager's reporting choice risks could be ignored. Lastly, this study has yet to prove that EQ act as the mediator between the CSR and COC relationship.

Implications

The results of this study have several implications. On the theory side, our results contribute to enriching the empirical study using the signaling theory and agency theory. We also use the behavioral agency model to describe the manager's motivation to disclose CSR and earnings. Further, we add earnings quality as a mediating variable which as far as we know, has never been done before. Our result proved that better CSRD might reduce COE, but not affecting COD. Firms with better CSRD tend to have better EQ as reflected with the less rate of discretionary accruals. EQ did not affect COC. EQ did not mediate the effect of CSRD on COC in Indonesian mining companies. On the practical side, we suggest that CSRD can be an indicator of firm ethics as both CSRD and earnings quality depend on the manager's reporting choice. Hence, investors can consider the level of CSRD to measure whether a firm has a more ethical reporting choice. We also find that the Financial Service Authority Regulation to mandate CSR show some good progress as investors begin to take CSR disclosure level into account.

Limitations

This study has limitations. First, we only use CSR disclosure content based on sustainability reports and annual reports to measure CSR. Human error when assessing the CSR disclosure may occur due to the writer's subjectivity. Besides, these disclosures might not reflect the actual CSR practices. This limitation happened because there is no publicly available CSR assessment data in Indonesia. Second, we only find less than 10% adjusted R-Squared on all models showing that CSRD's impact on the cost of capital is still weak. It is allegedly because the Financial Services Authority Regulation No.51/POJK.03/2017 as the mandatory regulation of CSR was just issued in 2017, so investor concern for CSR reporting has only recently increased. CSR is expected to have a more significant influence over time.

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