CHAPTER 20

DISCLOSURE, INFORMATION ASYMMETRY AND THE COST OF EQUITY CAPITAL: EVIDENCE FROM INDONESIA

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ABSTRACT

Purpose: *The purpose of this study is to analyze whether information asymmetry (ASYM) plays a mediating role in the relationship between corporate disclosure and cost of equity capital (COEC) in emerging markets such as Indonesia.*

Design/Methodology/Approach: *This study is a quantitative study using secondary data obtained from listed manufacturing firms from 2015 to 2017. Purposive sampling was used to select 105 firms. The design of this study was causality research, and the analysis was performed through ordinary least squares (OLS) regression and path analysis.*

Findings: *The results show that the level of disclosure for corporate social responsibility (CSR), intellectual capital, and enterprise risk management (ERM) reduces the COEC by suppressing ASYM. This finding confirms the argument that managers can reduce their companies' COEC by reducing ASYM through increased disclosure. These results are controlled by earnings quality (EQL) because that is most relevant to the COEC, as well as corporate size, leverage, and differences in institutional factors.*

Originality/Value: *This research is based on the central assumption that disclosure enhances the level of information while EQL remains the focus for*

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investors. This research is also the first to study CSR disclosure, intellectual capital disclosure, and ERM disclosure together as a proxy for disclosure. The findings confirm that managers can reduce their companies' agency conflict by increasing their level of disclosure. Managers can also reduce the COEC by reducing ASYM through increased disclosure. This also implies that increasing the level of disclosure will be effective in reducing the COEC for companies in emerging markets, such as Indonesia.

Keywords: Cost of equity capital; corporate social responsibility; enterprise risk management; information asymmetry; intellectual capital; voluntary disclosure

1. INTRODUCTION

The purpose of this chapter is to analyze whether information asymmetry (ASYM) plays a mediating role in the relationship between corporate disclosure and the cost of equity capital (COEC) in emerging markets like Indonesia. Healy and Palepu (2001) argue that disclosure reduces the level of ASYM between companies and investors. Various studies have shown that earnings and financial information remain dominant factors affecting the COEC (Aboody, Hughes, & Liu, 2005; Bhattacharya, Daouk, & Welker, 2003; Francis, LaFond, Olsson, & Schipper, 2004; Lambert, Leuz, & Verrecchia, 2006; Leuz & Verrecchia, 2000). However, in this development, various non-financial factors started being examined, such as firm characteristics (Botosan, Plumlee, & Wen, 2011), ASYM (Cheynel, & Levine, 2019; Francis et al., 2004; Gong, 2019; Hail & Leuz, 2006; Leuz & Verrecchia, 2000), disclosure (Botosan, 1997; Botosan & Plumlee, 2002; Cuadrado-Ballesteros, Garcia-Sanchez, & Martinez Ferrero, 2016; Cheynel, 2013; Dhaliwal, Li, Tsang, & Yang, 2011, 2014; Francis et al., 2004; Lambert et al., 2006; Souissi & Khlif, 2012), as well as voluntary disclosure and its effect on some indicators such as asset pricing, COEC, and the confidence in financial reports (Bangmek, Yodbutr, & Thanjunpong, 2020; Dye & Hughes, 2018)

In essence, disclosure involves transforming confidential information into public information (Scott, 2016), and it is useful in enhancing investor to understand the company's management. This encourages investors to lower their anticipated level of risk (Ashbaugh, Collins, & Lafond, 2004; La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 2000). Increased disclosure by companies provides investors with additional information about the company because risk-averse investors tend to avoid companies that they do not understand (Merton, 1987).

Predictions related to disclosure, ASYM, and the COEC have been discussed by many articles (Al-sakini, 2019; Diamond, 1985; Diamond & Verrecchia, 1991; Michaels & Grüning, 2017). They showed that the greater disclosure reduces ASYM and consequently lowers the COEC. Besides, Cuadrado-Ballesteros et al. (2016) enhanced this research by using both financial and non-financial proxies for social disclosures.

In 2014, Organization for Economic Co-operation and Development (OECD) stated that a strong disclosure regime that promotes real transparency is a pivotal feature of the market-based monitoring of companies, and it is at the center of shareholders' ability to exercise their ownership rights on an informed basis. This accords with the argument that disclosure is another form of information that investors can use to arrive at earnings information in the fundamental analysis process (Penman, 2013).

Some studies have focused on emerging markets (Cui, Jo, & Na, 2016; De Klerk, de Villiers, & van Staden, 2015; Khlif, Samaha, & Azzam, 2015; Nahar, Azim, & Anne Jubb, 2016). The context of emerging markets features complex problems that are interesting to study. One of the emerging markets that still face the challenge of expensive equity capital is Indonesia.

Research into the COEC has always been an interesting theme in the setting of emerging markets (Bekaert, Harvey, Kiguel, & Wang, 2016). With regard to disclosure, emerging countries tend to feature lower levels of transparency (Millar, Eldomiaty, Choi, & Hilton, 2005). Such low levels of institutional transparency in these countries have the effect of high investment costs for companies, which in turn weaken their ability to appeal to investors and attract external capital (PricewaterhouseCoopers, 2003).

This research is based on the central assumption that disclosure enhances the level of available information, with earnings quality (EQL) being the primary focus of investors. This research is the first study that examines corporate social responsibility (CSR) disclosure, intellectual capital disclosure (ICD), and enterprise risk management (ERM) disclosure combined as a proxy for disclosure. The results of this study are expected to provide evidence that managers can reduce their corporate agency conflict by increasing their levels of disclosure. This, in turn, implies that increasing the level of disclosure is an effective way to reduce ASYM and ultimately reduce the COEC for companies in emerging markets like Indonesia.

This chapter is organized as follows. The following section provides a brief background in terms of previous studies that empirically test the hypotheses. Section 3 then describes the data and measurement variable information, while Section 4 presents the empirical analyses and findings. Finally, Section 5 concludes the chapter.

2. LITERATURE REVIEW AND HYPOTHESES

2.1. Literature Review

Lev (1992) defines disclosures as efforts to communicate company information, both quantitatively and qualitatively, as well as retrospective and prospective, to investors. Hendriksen and Van Breda (2001) argue that disclosures in financial statements contain important meanings and present useful information to help the efficient operation of the capital market. This can be interpreted in that in a broader sense, disclosure also includes efforts to communicate material company information, both quantitatively and qualitatively, retrospective and prospective, to investors and other stakeholders.

According to Scott (2016), the types of disclosures published by companies can be divided into two groups, namely mandatory disclosure and voluntary disclosure. Furthermore, according to Scott (2016), voluntary disclosure can be a voluntary release of company financial information to the public, such as financial statements, without any regulatory obligation. Voluntary disclosure by a company goes beyond the provision of mandatory information. The broader the level of disclosure by a company, the better the market understands that company, thereby reducing uncertainty due to ASYM.

In terms of the motivation for such disclosure, voluntary disclosure goes beyond the basic obligations and is based on agent incentives (Healy & Palepu, 2001). The motivation may be to reduce ASYM, so outside stakeholders can receive correct information about the company's prospects, or it may be driven by management's desire to gain credit for their performance in managing the company (Scott, 2016).

This study uses three non-financial voluntary forms of disclosure as proxies for disclosure. These are corporate social disclosure, ICD, and ERM disclosure. These are used because they are the most widely practiced forms of disclosure in various countries, and they are relevant to the context of Indonesia as an emerging market.

2.2. Disclosure and the COEC

The value of a company's published earnings is often used by investors in determining the COEC. Rational investors calculate a company's value based on a fundamental analysis that includes five stages, namely knowing the business, analyzing information, forecasting the payoff, converting this forecast to a valuation, and trading based on this valuation. Of these five stages, the payoff forecasting stage is most relevant to this study. At this stage, investors take into account the expected rate of return for the future based on company earnings information. Investors take into account the level of risk and demanding a price for this perceived of risk. This study used Capital Asset Pricing Model (CAPM) as a measurement.

There are two elements to CAPM, namely the risk free and risk premium (Lintner, 1965; Sharpe, 1964). The risk premium element is the additional risk that specifically relates to a company multiplied by the market risk. The CAPM, therefore, reflects the level of risk that the investor will bear and the price that he or she is asking to bear. In contrast, to companies, CAPM is a cost that must be borne to obtain investment. The risk-free element is a cost that is borne when the company requires external funding, while the risk premium element is an additional cost that must be borne to obtain investment.

One form of disclosure examined in this study involves CSR. Currently, companies compete to disclose CSR, which involves providing information about a company's environmental and social performance (Gamerschlag, Möller, & Verbeeten, 2011). From an economic perspective, companies can disclose this information to reduce ASYM and lower the COEC. Also, ICD is used because this study focuses on how corporate disclosure about social and human capital affects ASYM between managers and investors (Cormier & Magnan, 2003).

This research relates closely to that of Mangena, Li, and Tauringana (2016) in terms of the relationships between ICD, ASYM, and the COEC. Several previous researchers have already tested the relationship between ICD and the COEC, such as Singh and Van der Zahn (2008), Bontis, Bart, and Kristandl (2007), and Orens, Aerts, and Lybaert (2009). The use of ERM disclosure is avoided by many firms believe that disclosing more information about risk to stakeholders might jeopardize their value (Kurniawanto, Suhardjanto, & Agustiningsih, 2017; Nugroho, Utami, Sanusi, & Setiyawati, 2018). While the literature on ERM is still in the developmental stage, it seems clear that it has a significant and positive effect on a firm's valuation and subsequently the COEC (Krause & Tse, 2016).

Based on the description above, this study formulates the following hypotheses:

H1. Corporate social responsibility disclosure affects the cost of equity capital.

H2. Intellectual capital disclosure affects the cost of equity capital.

H3. Enterprise risk management disclosure affects the cost of equity capital.

2.3. Disclosure, ASYM, and the COEC

Investors' behavior toward disclosure fulfills the agency theory assumption that human rationality is limited in its ability to predict the future (Eisenhardt, 1989). The inability of investors to predict a company's future leads them to desire the disclosure of financial information to estimate future financial performance. Likewise, the third assumption of agency theory stated that humans always avoid risk, reflecting how investors tend to avoid riskier investment prospects.

This means that investors need disclosure to calculate the certainty of the rate of return and the risk for their investment. Thus, companies with greater levels of financial information transparency present lower investment risks. The level of disclosure, as a form of transparency, therefore determines the willingness of investors to invest. This conclusion is based on the argument that voluntary disclosure decreases the level of ASYM between those investors who receive information and those who do not (Diamond & Verrecchia, 1991; Healy & Palepu, 2001; Kim & Verrecchia, 1994). Merton (1987) also supports this opinion by stating that risk-averse investors generally do not invest in companies that they do not understand.

This condition implies that companies with lower levels of transparency will experience difficulty in attracting funding, which will in turn affect that company's financial performance. Gelb and Zarowin (2000) prove that companies with high disclosure rates have higher share prices and earnings when compared to companies with low levels of disclosure.

Financial statements present information about the performance and prospects of the company being managed by the agent (Ross, 1977). This demonstrates that information about earnings is important for investors. Information about profits is used by investors to estimate the level of investment returns.

This study suspects that the relationship between disclosure and the COEC is an indirect one passing through ASYM. This is because the level of disclosure, as

an effort to reduce ASYM, is used by investors to determine the expected level of return on their investment. Conversely, disclosures that do not reduce ASYM will not convince investors, resulting in the high COEC.

The argument that company disclosure influences the COEC through ASYM is supported by Levitt (1998), a former Chairman of the SEC, who states that the quality of accounting information is positively related to market liquidity, which in turn reduces capital costs and ASYM (Glosten & Milgrom, 1985; Kyle, 1985). Lambert, Leuz, and Verrecchia (2011) theoretically shows that ASYM affects the COEC. This argument was later empirically tested by He, Lepone, and Leung (2013), who found that the COEC increased with higher levels of ASYM.

Previous studies that specifically examined the effect of disclosure on the COEC (Botosan, 2006; Botosan & Plumlee 2002; Diamond & Verrecchia, 1991; Lambert et al., 2006; Lang & Lundholm, 2000) also showed a significant negative effect. Based on the previous study and the arguments discussed above, this study formulates the following hypotheses:

H4. Corporate social responsibility disclosure affects the level of cost for equity capital through the mediation of information asymmetry.

H5. Intellectual capital disclosure affects the level of cost for equity capital through the mediation of information asymmetry.

H6. Enterprise risk management disclosure affects the level of cost for equity capital through the mediation of information asymmetry.

3. DATA AND VARIABLE MEASUREMENT

3.1. Data

This study employed quantitative research with secondary data in the form of annual reports issued by manufacturing companies listed on the Indonesia Stock Exchange from 2015 to 2017. The sample was selected using purposive sampling, resulting in a total of 105 companies. The decision to use a single industry was based on the study by Botosan (1997), which states that every industry has a different disclosure pattern, so study into disclosure needs to be first performed for one industry. The design of this study was causality study and the analysis was performed through OLS regression and path analysis.

3.2. Variable Measurement

This study examined the direct and indirect effects of disclosure on the COEC. The research model is presented below:

$$\text{COEC} = \beta + \beta\,\text{CSR} + \beta\,\text{ICD} + \beta\,\text{ERM} + \beta\,\text{EQL} + \beta\,\text{TA} + \beta\,\text{LEV} + \beta\,\text{Year} + \epsilon \quad (1)$$

$$\text{ASYM} = \beta + \beta\,\text{CSR} + \beta\,\text{ICD} + \beta\,\text{ERM} + \beta\,\text{EQL} + \beta\,\text{TA} + \beta\,\text{LEV} + \beta\,\text{Year} + \epsilon \quad (2)$$

$$\begin{aligned}\text{COEC} = \beta + \beta\,\text{CSR} + \beta\,\text{ICD} + \beta\,\text{ERM} + \beta\,\text{ASYM} + \beta\,\text{EQL} \\ + \beta\,\text{TA} + \beta\,\text{LEV} + \beta\,\text{Year} + \epsilon \end{aligned} \quad (3)$$

3.2.1. Dependent Variable: COEC

In this study, the COEC comes from two points of view. First, from the company's point of view, the COEC is the cost that must be paid by the company to obtain external funding. On the other hand, from the investor's point of view, the COEC is the level of required or expected return on an investment (Setiany, Suhardjanto, Lukviarman, & Hartoko, 2017). The above definition accords with the statements of Botosan (2006) and Lambert et al. (2006). In this study, the COEC is calculated based on the CAPM. CAPM was formulated by Sharpe (1964) and Lintner (1965) as follows:

$$\text{CAPM} = \text{Risk Free} + \beta i\ \text{Risk Premium} \quad (4)$$

$$\text{CAPM} = \text{Risk Free} + \beta i\ (\text{Return market} - \text{Risk Free}) \quad (5)$$

3.2.2. Independent Variables

3.2.2.1. CSR Disclosure.

Some information about CSR must be included in a company's annual report in accordance with applicable company regulations. The CSR disclosure index is based on the Global Reporting Initiative standard in Sustainability Reporting Guidelines version 3.0 (G3), which is divided into six indicators with 79 disclosure items, including (a) economic performance indicators, (b) environmental performance indicators, (c) labor performance indicators, (d) human rights performance indicators, and (e) social performance indicators. This approach uses a dichotomous approach where each CSR item in the study instrument is given a value of 1 if disclosed or a value of 0 if not disclosed. Following this, the scores are summed up to get an overall score for a company.

3.2.2.2. Intellectual Capital Disclosure.

Intellectual capital represents organizational knowledge assets that contribute significantly to increasing a firm's competitive position by adding value for interested parties (Marr & Schiuma, 2001). With intellectual capital, value creation is achieved by maximizing the utilization of intellectual capital elements, namely human capital, physical capital, and structural capital (Sudibya & Restuti, 2014). Sawarjuwono and Kadir (2003) classify intellectual capital into three main components or elements. Bukh, Larsen, and Mouritsen (2005) uses an ICD index that consists of six categories, namely employees, customers, technology information, research and development processes, and strategic statements, which could be breakdown into 78 items. The disclosure of intellectual capital is a form of voluntary disclosure that can be a positive signal for the users of financial information.

3.2.2.3. Enterprise Risk Management Disclosure.
The disclosure of risk management involves information relating to a company's commitment to managing risk (Meizaroh & Lucyanda, 2011). According to Committee of Sponsoring Organizations (COSO) (2004), a company's risk management disclosure can be measured based on 108 items. Regulatory boards in Indonesia have confirmed that companies' obligation is to disclose risk management information in their annual reports (i.e., mandatory disclosure).

3.2.3. Mediating Variable: ASYM

ASYM means there is a discrepancy in the information of managers and investors. ASYM is often measured according to the bid–ask spread because it cannot be directly observed (Qu, Wongchoti, Wu, & Chen, 2018). This study measures ASYM using the relative bid–ask spread, which is calculated as follows:

$$\text{ASYM} = ((\text{Hat} - \text{Hbt}))/(1/2\ (\text{HAt} + \text{HBt})) \times 100\% \tag{6}$$

where RBAt = bid–ask spread in period t; Hat = price of sales offer in period t; and HBt = price of purchase offer in period t.

3.2.4. Control Variable

3.2.4.1. Earnings Quality.
EQL in this study is defined as the level of closeness in the realization of the value of earnings into cash. This definition is compatible with the context of this study because the closeness between the value of earnings and cash is also determined by the behavior of management in regulating the value and time of accruals (Scott, 2016). Schipper and Vincent (2003) states that EQL can be explained through four approaches, namely (i) earnings persistence; (ii) qualitative characteristics of the conceptual framework; (iii) earnings, cash, and accrual relationships; and (iv) decision implementation. Based on these four explanations, this study uses the third approach, namely the relationship between earnings, cash, and accruals.

The reason why this study used the earnings–cash–accrual relationship approach is to determine quality earnings (Dechow & Schrand, 2004). The quality earnings meet three criteria, they are (1) reflect current performance; (2) act as a good indicator of future operating performance outcome; and (3) accurately reflect the company's value. Therefore, investors can use quality earnings to make a better decisions and explain or predict stock prices and returns (Bernard & Stober, 1989; Siallagan & Machfoedz, 2006).

This study used discretionary accrual levels as measured by the modified Jones model Dechow, Sloan, and Sweeney (1995) because this model has been widely tested in previous studies. The model used in the modified Jones model formulated is as follows:

$$\text{TA}_{it} = \beta_1(1/A_{it-1}) + \beta_2(\Delta\text{REV}_{it} - \Delta\text{REC}_{it}) + \beta_3\,\text{PPE}_{it} + \epsilon_{it} \tag{7}$$

where TA_{it} is the total accrual of firm i in year t; A_{it-1}, total assets for year $t-1$; ΔREV_{it}, growth of revenue of firm i, divided by total assets for year $t-1$; ΔREC_{it}, growth of receivable of firm i, divided by total assets for year $t-1$; PPE_{it}, property plant and equipment; and ϵ_{it}, error term.

Discretionary accrual values obtained from the error term model can indicate positive or negative values. This measure aims solely to quantify the quality of earnings and does not seek to identify a positive or negative direction. Therefore, the discretionary accrual value obtained from the regression results is absolute. A smaller discretionary accrual size indicates better EQL. This means that the smaller the discretionary accruals, the more accurately the published earnings of a company reflect its true earnings.

3.2.4.2. Firm Size (TA).
This study uses the firm size as a control variable. The size of a company as a characteristic in this study was measured according to the logarithm of total assets (TA) (log of TA). This study uses firm size because it is a determinant that is widely used to assess companies (Li, 2009), so it is therefore needed to control the direct or indirect influence of corporate governance on the COEC. This study also conducted a split sample based on the mean TA.

3.2.4.3. Leverage (LEV).
LEV is a funding policy related to a company's decision to finance its operations. Companies with debt are obliged to pay interest and loan principal expenses. The use of loans (i.e., external financing) brings a considerable risk of them not being paid back, so loan issuers need to pay attention to a company's ability to generate profits. This study used LEV as a control variable, as a proxy for the debt-to-asset ratio.

3.2.4.4. Year.
This study uses the year as a dummy control variable. The value 1 is given to year J and 0 to another year. The use of this dummy year refers to the study by Qi, Wu, and Zhang (2000). Dummy years are used to control changes in the macroeconomic environment during the study period (Qi et al., 2000).

4. EMPIRICAL ANALYSIS

According to Table 1, the values of significance in all three regression models are fit (i.e., $p < 0.05$), which means the regression models can be used to predict the dependent variable. Although this study tested three research models, model 2 will not discuss further because it was implemented solely to meet the requirements. However, the conclusion about the presence of mediation can be arrived by comparing model 1 (the direct effect) and model 3 (the indirect effect).

Table 1. The Result of Regression Analysis.

Variable	COEC (1)	ASYM (2)	COEC (3)
Intercept	0.546	0.305	0,305
	(0.036)**	(0.026)**	(0.208)
CSR	−0.229	−0.110	−0.141
	(0.031)**	(0.047)**	(0.151)
ICD	−0.237	−0.258	−0.032
	(0.032)**	(0.000)***	(0.767)
ERM	−0.422	−0.351	−0.144
	(0.054)*	(0.003)***	(0.489)
ASYM	–	–	0.792
			(0.000)***
EQL	0.399	0.108	0,314
	(0.002)***	(0.098)*	(0.007)***
SIZE	0.006	0.006	0.002
	(0.302)	(0.070)*	(0.769)
LEV	0.090	0.014	0.080
	(0.004)***	(0.404)	(0.006)***
Year_2016	−0.009	−0.002	−0.007
	(0.588)	(0.791)	(0.637)
Year_2017	0.006	−0.005	0.010**
	(0.703)	(0.568)	(0.499)
R	0.294	0.315	0.404
Adj. R^2	0.219	0.258	0.348
F-statistic	4.642	5.522	7.162
	(0.000)	(0.000)	(0.000)

Significant levels at *10%, **5%, and ***1%, respectively.

Table 1 presents that the coefficient of determination of model 1 is indicated by an adjusted R^2 of 0.219, so the CSR, ICD, and ERM variables, as well as the control variables, can explain the dependent variable (i.e., the COEC) by 21.9%, with the remaining 78.1% being explained by other variables outside the scope of this study.

Model 2 shows an adjusted R^2 of 0.348, so the variables for CSR, ICD, ERM, and ASYM, as well as the control variables, can explain the COEC by 34.8%, with the remaining 65.2% being explained by other variables outside the scope of this study. Based on the results of data processing, the path analysis resulted in the value of $e_1 = \sqrt{(1 - 0.219)} = 0.883$ and the value of $e_2 = \sqrt{(1 - 0.348)} = 0.806$.

4.1. The Direct Effect

The first model shows the influence of CSR disclosure, ICD, and ERM disclosure on the COEC. Based on Table 1, for the first of these variables, the significance of $0.031 < 0.05$. Therefore, *H1a is supported*, which means that CSR disclosure lowers the level of COEC. Moving on to the second variable, ICD, Table 1 shows a significance of $0.032 < 0.05$. It can be concluded that *H1b is supported*, which means that ICD lowers the level of COEC. The third variable, ERM disclosure, has a significance of $0.054 < 0.10$, so *H1c is also supported*. This means that ERM disclosure lowers the level of COEC.

This study predicts that the higher the level of a company's disclosure toward investors, the lower the COEC that the company incurs. Increased disclosure shows a willingness by companies to convert confidential information into public information (Scott, 2016), thereby increasing investors' understanding of a company's management. This condition encourages investors to lower their level of anticipated risk (Ashbaugh et al., 2004; La Porta et al., 2000).

The level of disclosure in this study shows a negative effect on the COEC. This result indicates that disclosure has an effect on the COEC. Increased disclosure by a company provides additional information to investors about the company. This is helpful because risk-averse investors tend not to invest in companies they do not understand (Merton, 1987), so a company may hope that increased transparency will attract investment.

As a result, investors gain a better understanding of a company's management. This in turn leads to investors lowering their estimates of the level of risk involved, which subsequently makes them willing to reduce the required return they demand on their investment. Thus, the company enjoys a lower level of the COEC.

The results is in line with Botosan (1997), Diamond and Verrechia (1991), Botosan and Plumlee (2002), Lang and Lundholm (2000), and Lambert et al. (2006), which all showed that disclosure has a negative (lowering) effect on the COEC. However, the results of this study contradict those of Francis, Khurana, and Pereira (2005) and Murni (2004), who instead concluded that the level of voluntary disclosure increases the COEC.

The discrepancies between the results of this study and some previous research are due to this study's focus on three forms of disclosure (i.e., CSR, ICD, and ERM), under the control of EQL as the main information for investors. Therefore, the results of this study show that in addition to financial information, investors need and appreciate additional non-financial information. These results support the claim that companies need to increase disclosure following FASB (2001) that stated in one of its reports on disclosure: "… Informative disclosures that help investors interpret companies economic prospects are believed to reduce the cost of capital."

4.2. The Indirect Effect

The third model shows the effect of CSR, ICD, and ERM on the COEC, as controlled by ASYM. The results show that all three independent variables do not exert a significant influence on the COEC, while ASYM does exercise significant influence on the COEC. The indirect effect of disclosure on the COEC mediated by ASYM is calculated by multiplying the coefficient of each independent variable with the coefficient of the mediating variable.

Based on the results of the path analysis, as shown in Table 2, all the independent variables (i.e., CSR, ICD, and ERM) have an indirect effect on the COEC through ASYM. Thus, it can be concluded that the research hypotheses *H2a, H2b, H2c are supported*.

The purpose of examining the indirect effect of disclosure on the COEC is based on the hypothesis that disclosure's relationship to the COEC works indirectly through ASYM. This study suspects that disclosure does not directly

Table 2. The Results of Path Analysis.

Path	Independent Variable Direct Effect		Mediating Variable Effect		Total Indirect Effect			Conclusion
	Beta	SE	Beta	SE	Beta	SE	*t*	
CSR > ASYM > COEC	0.229	0.105	0.792	0.177	−0.181	0.094	−1.926 *	Significant
ICD > ASYM > COEC	0.237	0.109	0.792	0.177	−0.188	0.098	−1.922 *	Significant
ERM > ASYM > COEC	0.422	0.216	0.792	0.177	−0.334	0.191	−1.753 *	Significant

* Significant level of percent with *t* table 1.660.

affect the COEC but rather operates indirectly through ASYM. The analysis was done by controlling the quality earnings, because investors use earnings information as the main consideration for determining the level of investment returns, because earnings are used by investors to assess financial performance, predict future earnings, and estimate the investment risk (Kirschenheiter & Melumad, 2002).

This study proves the existence of the mediating role of ASYM on the relation between disclosure and the COEC. According to Healy and Palepu (2001) disclosure reduces the level of ASYM between companies and investors. This research supports predictions related to disclosure, ASYM, and the COEC, as have been discussed by Diamond (1985), Diamond and Verrecchia (1991), and Cuadrado-Ballesteros et al. (2016), as well as Michaels and Grüning (2017). These predict that greater disclosure lowers ASYM and consequently reduces the COEC. This can be interpreted in that a strong disclosure regime that promotes real transparency is a pivotal feature of the market-based monitoring of companies and central to shareholders' ability to exercise their ownership rights on an informed basis as stated by OECD (2004).

These results encourage to increase its level of disclosure (in this case, CSR, ICD, and ERM). Managers' willingness to disclose what would otherwise be confidential information can reduce information asymmetries, ultimately benefiting the company in terms of lower the COEC. Thus, concerns about a high level of disclosure being detrimental to a company can be overcome. On the other hand, managers, supervisor, and investors can use disclosure as a tool for monitoring managers' behavior and the company's future prospects.

The evidence of the indirect relationship between disclosure, ASYM, and the COEC shows that this information gap can be reduced by increasing disclosure. This result supported by the OECD's (2004) statement that a strong disclosure policy is one form of monitoring that is expected to be useful as a basis for adequate information for investment decision-making. These results indicate that voluntary disclosure complements earnings information and reduces the level of ASYM. This confirms that disclosure is another form of information that investors use to accompany earnings information in the fundamental analysis process (Penman, 2013).

5. CONCLUSION

This study found that increasing disclosure reduces the COEC. It examined CSR, ICD, and ERM disclosures, and how these increased the investors' understanding of a company. The information is needed by investors for a fundamental analysis to estimate the level of risk and the returns. The results also show that the level of CSR, ICD, and ERM disclosures reduce the COEC by reducing ASYM. This finding confirms the argument that managers can reduce their companies' COEC by reducing ASYM through increased voluntary disclosure. These results are controlled by EQL as the most relevant information to the COEC, in addition to corporate size, LEV, and differences in institutional factors.

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