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Abstract: Our study aims to investigate the effect of accounting conservatism on the cost of equity capital. We also extended our tests to see to what extent information asymmetry influencing these two variables. To test our proposed hypothesis, we used a sample of 200 companies listed on the Indonesia Stock Exchange for the 2016–2018 period and 600 firm year observations. With the moderate regression analysis (MRA) method and panel data regression, we provide evidence that information asymmetry is related to accounting conservatism and cost of equity capital, as well as having a role in influencing accounting conservatism and cost of equity capital. We also found that accounting conservatism could reduce the cost of equity capital. Our study is expected to make a contribution to academics, investors, managers, and regulators. Furthermore, this study is expected to fill the debate of financial accounting practices in developing countries.

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1 Introduction

This study aims to investigate the effect of accounting conservatism on the cost of equity capital. Then, we extended the test to see to what extent information asymmetry influencing these two variables. Research on conservatism is still an interesting theme to research and has even been debated among academics and standard setters (Khalifa and Ben Othman, 2015; Zhong and Li, 2017). Standard setters do not currently recognise accounting conservatism as part of the characteristics of financial statements. However, studies prove otherwise, accounting conservatism is precisely an indicator of a high-quality financial reports (Khalifa and Ben Othman, 2015). As shown by a number of studies, accounting conservatism has also developed in the last three decades (Givoly and Hayn, 2000; Grambovas et al., 2006; Giner and Rees, 2001).

Apart from accounting conservatism, we also find evidence that information asymmetry is still a debate among academics (Lambert et al., 2012). Some argue that information asymmetry can increase the cost of equity capital (Hughes et al., 2011; Lambert et al., 2012; Easley et al., 2002). The results of Lambert et al.'s (2012) study show that in an imperfect competition, information asymmetry affects the cost of equity capital. In other words, the level of competition in the capital market plays an important role in the relationship between information asymmetry and the cost of equity capital. Elsewhere, Easley et al. (2002) specifically analysed the differences in the composition of information between public and private information. According to them, traders on the exchange who are not well informed tend to be at a disadvantage and consequently have few assets. This will result in a decrease in the price of securities and will ultimately increase the cost of equity capital. In contrast to these studies, a number of studies found that increasing information asymmetry will actually reduce the cost of capital (Wang, 1993; Fan and Zhang, 2012; Lafond and Watts, 2008; Suijs, 2008; Ball, 2001; Bagnoli and Watts, 2005). Apart from being debatable, information asymmetry has long been a serious concern in the capital market (Lambert et al., 2012). For example, the Securities and Exchange Commission (SEC) enforces a Regulation Fair Disclosure (Reg FD). This regulation prevents companies from making disclosures to select investors and analysts. The SEC argued that selective disclosure could lead to information asymmetry.

Research related to accounting conservatism, information asymmetry, and cost of equity capital in Indonesia is still limited. The literature study conducted by Budiasih (2011) captures the role of accounting conservatism in relation to information asymmetry. Another study conducted by Sulistiawan and Rudiawarni (2017) examined accruals with stock returns. Then, Sulistiawan and Rudiawarni (2019) also linked industry competition and earnings management. However, based on the researchers' knowledge, studies that focus on how market information affects corporate behaviour

have not been widely carried out, especially in the context of the capital market in Indonesia. In addition, we conducted this study to fill the debate among researchers and standard setters. Our study differs from previous studies with the same theme. First, we adopted a measurement of the cost of equity capital that fits the context of developing countries, i.e., the Estrada model. Second, we examined the interaction between information asymmetry, conservatism, and cost of equity capital.

Indonesia is a developing country. We are interested in researching in Indonesia because of the developing condition of the capital market. Referring to Dakhlaoui et al. (2017), developing capital markets attract investors to see how corporate governance mechanisms work. Further, La Porta et al. (1999) argue that research themes in the capital market are very interesting to study.

Cost of equity capital is often used to evaluate financing alternatives (Embong et al., 2012). An example is to prepare a budget and evaluate company performance (Pagano and Stout, 2004). The high cost of equity capital will cause potential investment to be rejected and ultimately will affect the company's growth (Embong et al., 2012). Therefore, this study is important as a basis for companies to control the cost of equity capital. In addition, it is also important to understand that in conditions of high information asymmetry, managers find it difficult to understand the real situation of investors (Kong et al., 2011), which in turn will reduce firm value (Jensen and Meckling, 1976).

To perform hypothesis testing, following Armstrong (2011), we used SPREAD as a proxy to measure information asymmetry. Then, we also used the model by Khan and Watts (2009) to measure accounting conservatism. Finally, we used the model by Estrada (2000) to measure the cost of equity capital. In an effort to produce consistent research results, we performed robust tests. We used another measure of cost of equity capital, i.e., the CAPM. This model is widely used by researchers (Ingram and Margetis, 2010).

The results of this study generally provide information that information asymmetry and accounting conservatism are related to the cost of equity capital. This supports the signal model developed by Bagnoli and Watts (2005) that states information asymmetry is a positive signal for investors, and encourages managers to compile conservative financial reports. In the end, it will lower the cost of equity capital. Our results are also consistent with the results of other measurements, such as the CAPM.

This study is expected to contribute in several ways. First, this study contributes to the information asymmetry debate by clarifying the nexus of information asymmetry, accounting conservatism and cost of equity capital. Second, it provides empirical evidence for the development of the accounting conservatism literature, information asymmetry and cost of equity capital. Third, it contributes to the debate on the existence of accounting conservatism as part of the qualitative characteristics of financial statements. Of course, in this case it relates to standard setters regarding the importance of accounting conservatism as part of the qualitative characteristics of financial statements. Fourth, our study is expected to contribute to economic policies in developing countries, especially Indonesia, regarding the protection of investors and regulations that allow investors to invest in Indonesia. Fifth, we expect to provide important information on current accounting practices in Indonesia and possibly in other countries that apply the same concept. Finally, we hope that through this test, it will have implications for investors in considering their investment and the expected rate of return.

In an effort to understand this study, we organised the research into four sections. First, an introduction opens by describing the existence of research on information

asymmetry, conservatism and cost of equity capital, and the importance of this research. Second, a literature review describes the relationship of each variable and the formulation of hypotheses. Third, methods used to answer the hypothesis and the observations used are presented. Fourth, the results of research and discussion and the conclusion are provided.

2   Literature review and hypotheses development

Our study can be viewed from the point of view of agency theory and pecking order theory. Based on these theories, information asymmetry is a condition in which there are gaps in information held by principals and agents. Asymmetry can come in two forms, adverse selection and moral hazard. Adverse selection is a type of information asymmetry in which one or more parties have more information than the other party. Meanwhile, moral hazard is a form of information asymmetry in which one or more parties have the power to observe the actions of the other party. Watts (2003) and Lafond and Watts (2008) identified that the existence of information asymmetry will lead to agency costs, which in turn will reduce expectations of cash flows in the future. Furthermore, Easley et al. (2002) argued that information asymmetry will increase the balance of stock returns, so that stock prices will decline. Referring to Jensen and Meckling (1976), the condition of information asymmetry will encourage managers to perform earnings manipulation. Therefore, accounting conservatism is present as an attempt to reduce the indication that managers commit earnings manipulation (Lafond and Watts, 2008).

Pecking order theory also talks about how capital structure can affect information asymmetry. This theory was popularised by Myers and Majluf (1984). The postulate of this theory is that high information asymmetry will drive the high cost of equity capital. Information asymmetry arises when companies issue securities in the form of shares. Investors perceive those managers have more information regarding the issuance of these securities, so that investors will underestimate the issued share securities. The high information asymmetry and the low stock value represent the high cost of equity capital.

2.1   Accounting conservatism

A debate has emerged recently regarding the influence of conservativism on information risk in the capital market (Khalifa et al., 2018). For example, the Financial Accounting Standard Board (FASB) and the International Accounting Standard Board (IASB) clearly emphasise that accounting conservatism has a negative effect on the equity market. However, proponents of accounting conservatism see a positive effect on the equity market.

We also observed studies of Francis et al. (2004) in the context of countries in the USA from 1975 to 2001. The results of their study found that companies with a high level of accounting conservatism produce high earnings quality, and also support low cost of equity capital. Lara et al. (2011) conducted a study in the same country from 1975 to 2003. The results of their study support the consensus that accounting conservatism is negatively related to the cost of equity capital. Then, we also looked at the research conducted by Li (2015) in an international context. The results of their research found that countries with a high level of conservatism tend to have a low cost of equity capital.

The results of their study are confirmed by the results of study conducted by Artiach and Clarkson (2011) in the USA. The results of their study found a negative and significant effect of accounting conservatism and cost of equity capital. In line with this, Khalifa et al. (2018) performed a study in Africa and Asia. The results of their study found that accounting conservatism is one of the factors that can reduce the cost of equity capital.

2.2   Cost of equity capital

According to Dhaliwal et al. (2010), the cost of equity capital is the return expected by investors on their invested stocks. Several studies state that there are several valid measurements in measuring the cost of equity capital. For examples are the capital assets pricing model (CAPM) developed by Markowitz (1952), Fama and French's model (1997), the price earnings growth (PEG) model developed by Easton (2004), and the Estrada model (2000). Each model has its advantages and disadvantages. Some of the models we use are the CAPM and the Estrada model. The Estrada model is the appropriate model to be used, especially for developing countries, while the CAPM is a model that has been used by many researchers to measure the cost of equity capital.

2.3   Accounting conservatism and cost of equity capital

Studies prove that there is a relationship between accounting conservatism, information asymmetry, and cost of equity capital. Lafond and Watts (2008) argued that conservative financial reports can reduce information asymmetry. In line with this, Brennan and Subrahmanyam (1996) used proxies of bad news and good news information. The results of their study found that bad news information has a significant relationship with the cost of equity capital. Meanwhile, good news information is not statistically significant. Following the results of previous studies stated at the beginning (see Francis et al., 2004 Lara et al., 2011; Li, 2015; Artiach and Clarkson, 2011; Khalifa et al., 2018), we formulate the following research hypothesis:

H1 Ceteris paribus, accounting conservatism will reduce the cost of equity capital.

Following the study of Khalifa et al. (2018), we found three articles linking accounting conservatism to cost of equity capital through information channels. First, studies by Gietzmann and Trombetta (2003), Hail and Leuz (2006) and Lambert et al. (2012). Their studies argue that accounting conservatism acts as a substitute for voluntary disclosure. Second, Bagnoli and Watts (2005) frame the signal model. According to them, the information provided by managers regarding conservative financial reports allows investors to assess the actual information or prospects in the future. Third, a study by Guay and Verrecchia (2006) which found that accounting conservatism encourages managers to adopt strategic behaviour through full disclosure of required accounting information. Based on this description, we formulate the following second hypothesis:

H2 Ceteris paribus, information asymmetry influences the relationship between accounting conservatism and the cost of equity capital.

3 Research method

3.1 Sample

We used a sample of companies listed on the Indonesia Stock Exchange for the period of 2016 to 2018. We chose the particular year on the grounds that in 2017 the Financial Services Authority issued regulation number 58/POJK/.04/2017 concerning Electronic Submission of Registration Statements or Submission of Corporate Action. This regulation is important in disclosing information to the public or investors regarding the activities carried out by the company. This is closely related to the concept of information asymmetry and capital costs.

The total number of companies listed on the Indonesia Stock Exchange up to 2018 was 726 companies. For analysis purposes, we classify the companies listed on the stock exchange based on the following criteria:

1 Consistently submitting financial reports for three years.

2 submitting financial reports in the Rupiah reporting currency and there are bid and ask data, and stock returns. Based on the list, 526 companies did not meet the criteria and we could analyse 200 companies or issuers.

The total observations in this study were 600 observations.

Table 1 Distribution of firm-year observations by industry and year

Industry	2016	2017	2018	Observation	
				Total	%
Manufacture	26	26	26	78	13
Consumer goods	30	30	30	90	15
Infrastructure	21	21	21	63	10
Mining	7	7	7	21	3.5
Property	37	37	37	111	18.5
Trading	51	51	51	153	25.5
Agriculture, plantation, and forestry	12	12	12	36	6
Other industry	16	16	16	48	8
Total	200	200	200	600	100

3.2 Research model

To answer the hypothesis, we used the following model:

$$COEC_{it} = \beta_0 + \beta_1 CSCORE_{it} + \beta_2 SPREAD_{it} + \beta_4 FirmSpecific_{it} + \varepsilon_{it} \tag{1}$$

$$COEC_{it} = \beta_0 + \beta_1 CSCORE_{it} + \beta_2 SPREAD_{it} + \beta_3 CSCORE_{it} XSpread_{it} + \beta_4 FirmSpecific_{it} + \varepsilon_{it} \tag{2}$$

where $COEC_{it}$ is the cost of equity capital measured for each company in a certain year using the CAPM and Estrada model. $CSCORE_{it}$ is a measurement of accounting conservatism in year *t*, $SPREAD_{it}$, describing information asymmetry and finally

FirmSepcific is a control variable consisting of SIZE, leverage (LEV), return on assets, (ROA), and stock return volatility (RTVOL).

3.3   Variable measurement

3.3.1   Measuring accounting conservatism

One measure of conservatism is the model developed by Basu (1997). According to Khalifa et al. (2019), one of the weaknesses of this model is that it cannot describe accounting conservatism at the company level. Therefore, we use another model, the Khan and Watts' (2009) model. This model is a modification of Basu's (1997) model by accommodating the firm level, which involves company size, market to book ratio, and leverage. To use the model (Khan and Watts, 2009), we first substituted equation 4 and equation (5) to equation (3), so we got equation (6):

$$N_I = \beta_0 + \beta_1 D_t + \beta_2 R_{it} + \beta DR_{it} + \varepsilon_{it} \tag{3}$$

$$\beta_2 = \theta_1 + \theta_2 SIZE_i + \theta_3 MTB_i + \theta_4 LEVi \tag{4}$$

$$\beta_3 = \mu_1 + \mu_2 SIZE_i + \mu_3 MTB_i + \mu_4 LEV \tag{5}$$

$$\begin{aligned} N_1 = &\beta_0 + \beta_1 D_t + \left(\beta_2 = \theta_1 + \theta_2 SIZE_i + \theta_3 MTB_i + \theta_4 LEVi \right) \\ &R_{it} + \left(\mu_1 + \mu_2 SIZE_i + \mu_3 MTB_i + \mu_4 LEV_i \right) + DR_{it} + \delta_1 SIZE_i \\ &+ \delta_2 MTB_i + \delta_3 LEV_i + \delta_4 D_i SIZE_i + \delta_5 D_i MTB_i + \delta_6 D_i LEV_i + \varepsilon_{it} \end{aligned} \tag{6}$$

where N_I is the net income or loss divided by the share price at the beginning of the year. R_t is the annual stock return. D is a dummy variable equal to 1 if R is negative (bad news), and 0 if R is positive (good news). The coefficient β_3 indicates conditional conservatism. CSCORE as a proxy for conservatism is obtained by adding up the coefficient μ (1, 2, 3, 4).

3.4   Measuring cost of equity capital

Investors expect a return on their investment. This rate of return is represented in the cost of equity capital (Dhaliwal et al., 2011). There are two approaches in measuring the cost of equity capital. The first is the ex-post approach and the second is the ex-ante approach. One of the ex-post approaches is the CAPM and realised returns. Meanwhile, the ex-ante approach is more related to the forward-looking investors. Examples of these models are the residual income model, the Ohlson and Juettner-Nauroth model, and the Gode and Mohanram model. In this study, we used the Estrada measurement model developed by Estrada (2000). This model is an appropriate and valid model in measuring the cost of equity capital that occurs in developing countries such as Indonesia (Khalifa et al., 2019). The measurement of the cost of equity capital using the Estrada model is as follows:

$$COEC_t = R_{fus} + Rm_i * RP_w \tag{7}$$

where $COEC_t$ is the cost of equity capital, R_{fus} is the risk-free interest rate that we take from the 7 Day Repo of Bank Indonesia. We get RP_w through the difference between the market return and the risk-free interest rate. We obtain Rm_i through the following formula:

$$Rm_i = \frac{\Sigma_{\mu i}}{\Sigma_W} \tag{8}$$

$$\Sigma_{\mu i} = \sqrt{\frac{1}{T} \sum \left(R_i - \bar{R} \right)^2} \tag{9}$$

$$\Sigma_W = \sqrt{\frac{1}{T} \sum \left(R_m - \bar{R}_m \right)^2} \tag{10}$$

where $\dfrac{\Sigma_{\mu i}}{\Sigma_W}$ describes the down risk of the company, and R_i is the monthly return on company i, $\bar{R}$ is the average annual return on firm i, Rm, is the market return taken from the monthly return of IHSG, and $\bar{R}_m$ is the average annual market return. Thus, the cost of equity capital using the Estrada model is as follows:

$$COEC_t = R_{fus} + \frac{\Sigma_{\mu i}}{\Sigma_W} * \left(R_m - \bar{R}_{fus} \right) \tag{11}$$

3.5 Measuring information asymmetry

Following Armstrong (2011), we use a measurement of information asymmetry based on market information, namely SPREAD. Lafond and Watts (2008) argue that this measurement is appropriate in measuring the information asymmetry that occurs between securities traders in influencing the price. Previous research has also used this measurement as a proxy for information asymmetry (Brennan and Subrahmanyam, 1996; Armstrong, 2011). Referring to Jones (2002), SPREAD is the difference between the highest buying price (ask) and the lowest selling price (bid). In this condition, the investor will buy the shares and the issuer will agree to sell the shares. Measurement of information asymmetry is as follows:

$$SPREAD_{it} = \left(\frac{Ask_{it} - Bid_{Ask}}{Ask_{it} + Bid_{it}\big/2} \right) \tag{12}$$

3.6 Measuring control variable

We use company-specific control variable. This variable is also used by a number of studies (Khalifa et al., 2019; Li, 2015). As we convey in our research model, firm-specific control variables consist of SIZE, leverage (LEV), return on assets, (ROA), and stock return volatility (RTVOL). SIZE is the natural logarithm of total assets, LEV is the ratio of total debt to total assets, ROA is the ratio of net income to total assets, and RTVOL is the standard deviation of monthly stock returns.

Table 2   Descriptive statistics and correlational matrix

	COEC	CSCORE	SPREAD	SIZE	LEV	ROA	RTVOL
PANEL A: descriptive statistics							
Mean	0.453	0.104	0.053	6.571	0.475	0.043	0.104
Median	0.340	0.120	0.007	6.600	0.470	0.030	0.080
Maximum	2.780	1.120	1.000	8.310	2.000	0.920	0.930
Minimum	−0.410	−2.050	0.000	4.730	0.010	−1.020	0.010
Std. dev.	0.393	0.271	0.177	0.752	0.257	0.137	0.099
Observation	279	279	279	279	279	279	279
PANEL B: correlation matrix							
	COEC	CSCORE	SPREAD	SIZE	LEV	ROA	RTVOL
COEC	1.000000						
CSCORE	−0.256590	1.000000					
SPREAD	−0.046109	−0.002806	1.000000				
SIZE	−0.056874	0.270427	−0.094614	1.000000			
LEV	−0.001367	0.231239	0.036177	0.112511	1.000000		
ROA	−0.040547	0.021355	−0.106518	0.201911	−0.012635	1.000000	
RTVOL	0.427635	−0.031561	−0.030926	0.021805	0.000446	−0.036097	1.000000

Notes: Cost of equity capital (COEC), Accounting conservatism (CSCORE), information asymmetry (SPREAD), size, leverage, return on asset, return volatility.

4   Result and discussion

First, we conducted descriptive statistical tests through means, maximum values, minimum values and standard deviations. Second, we analyse the correlational relationship between variables. The following table represents descriptive statistics and correlational relationships between variables.

Table 2 panel A represents the descriptive statistics of the main variables we used. The cost of equity capital is measured through the Estrada model with a mean of 0.453, a median value of 0.340, a maximum value of 2.780, a minimum value of –0.410. Based on this result, we analyse that the cost of equity capital in the sample companies listed on the stock exchange is almost the same as the research conducted by Estrada (2000), ranging from 16 to 40%. However, this average is higher than the average found in previous studies performed in developing countries. An example is the research conducted by Hail and Leuz (2006). These results are consistent with the facts that in developing countries the macroeconomic and financial environment is illiquid, there are high volatility, high transaction costs, high information asymmetry and a lack of protection for investors (Aggarwal et al., 1999; Estrada, 2000). This condition allows for a high cost of equity capital (Botosan and Plumlee, 2002).

The mean accounting conservatism is 0.104, the median value is 0.120, the maximum value is 1.120, and the minimum value is –2.050. Our results are consistent with the research of Khalifa et al. (2018). This indicates that the sample in the study is more conservative. In addition, this is in line with the fact that the capital market in Indonesia is still developing and in imperfect competition conditions, so that the characteristics of high information asymmetry, high cost of equity capital, and lack of investor protection are still found. This is what encourages accounting conservatism. This is also in line with what was argued by Armstrong (2011).

The mean information asymmetry is 0.053, the median value is 0.007, maximum value 1 and minimum value 0. Our mean and maximum values are smaller than the study (Cormier et al., 2010), while minimum values are consistent with the study. This indicates that although Indonesia is a model market in the form of imperfect competition, the information asymmetry is not markedly high. In addition to our main variables, Table 2 Panel A also represents descriptive statistical testing information for our control variables, SIZE, LEV, ROA, and RTVOL.

Table 2 panel B represents the correlation matrix between variables, we get information that our main variable, accounting conservatism, is negatively related by 0.25, information asymmetry is negatively related by 0.04. Meanwhile, the control variable size is negatively related to 0.05, leverage has a negative relationship of 0.001, return on assets has a negative relationship of 0.04, and the return volatility has a positive relationship of 0.42. Almost all of the variables we use have a negative effect on the cost of equity capital. Only the volatility return variable has a positive effect. In general, these results do not show a high correlation which excludes the possibility of multicollinearity problems in the independent variables.

4.1   The effect of accounting conservatism on the cost of equity capital

To test the hypothesis, we did a panel test. The following table represents the panel data model selection. In this test, we involve firm-specific variables to control for information asymmetry, accounting conservatism and cost of equity capital. Table 3 represents a

summary of the results of hypothesis testing. First, the most appropriate model for testing this hypothesis is the fixed effects model based on the Hausman test results with a significance value of 0.000. Based on that, we obtain information that the coefficient of accounting conservatism is –0.370566 with a significance of 0.0007 at the 1% level. These results are consistent with a number of studies (Khalifa et al., 2019; Li, 2015; Artiach and Clarkson, 2011; Khalifa and Ben Othman, 2015) and also in line with the analysis constructed more studies (Gietzmann and Trombetta, 2003; Guay and Verrecchia, 2006; Botosan, 1997; Botosan and Plumlee, 2002; Botosan and Botosan, 2006) where conservatism is a substitute for voluntary disclosure which will ultimately reduce the cost of equity capital. The test results are also confirmed by Sergi et al. (2019) where all forms of company integration are characterised by a high level of institutionalisation.

Table 3   Summary result of panel data analysis

	Pooled OLS	*Random effect*	*Fixed effect*
Dependent variable: cost of equity capital (ESTRADA)			
Constant	0.290352 (0.1376)	0.290352 (0.1283)	–1.258018 (0.7645)
Cscore	–0.370465 (0.0000) ***	–0.370465 (0.0000)) ***	–0.370566 (0.0007) ***
Spread	–0.077903 (0.6767)	–0.077903 (0.6694)	–0.801175 0.0203*
Cscore * spread	–0.077537 (0.9559)	–0.077537 (0.9548)	12.06165 (0.0011) *
Size	– 0.001108 (0.9701)	–0.001108 (0.9694)	0.217124 (0.7349)
Lev	0.090374 (0.2778)	0.090374 (0.2663)	–0.430844 (0.096) **
ROA	–0.066017 (0.6721)	0.066017 (0.6646)	–0.041859 (0.9144)
RTVOL	1.664661 (0.0000) ***	1.664661 (0.0000) ***	4.891461 (0.0000) ***
Breusch pagan LM test	540.4150 (0.0000) ***		
Hausman test		0.3737 (0.0000) ***	
F statistic	12.70148 (0.0000) ***	12.0148 (0.0000) ***	1.497868 (0.020584) *
Adjusted r square	0.2275	0.2275	0.2637
Observation after adjustment	279	279	279

Notes: Figures in the parentheses are t-statistics, except for Breusch Pagan LM Test and
       Hausman Test, which are p-values, * significant at level 0.05 ($p < 0.05$),
       ** significant at level 0.1 ($p < 0.10$), *** significant at level 0.01 ($p < 0.01$).

The coefficient of information asymmetry is -0.801175 with a significance of 0.0203 at the 5% level. The results of this study are consistent with the signalling model developed by Bagnoli and Watts (2005) in which more information is owned by investors, which will allow investors to assess the company's performance properly and reduce errors in

estimating the required rate of return. In other words, the information asymmetry that occurs will be a positive side for managers in estimating company returns and performance, so that in the end it will reduce the cost of equity capital. Our study provides empirical evidence that in imperfect competitive markets, such as in Indonesia, the resulting information asymmetry will be a positive signal for investors, which in turn will reduce the cost of equity capital. Our study also supports studies conducted in several research (Wang, 1993; Fan and Zhang, 2012; Lafond and Watts, 2008; Suijs, 2008; Ball, 2001). Based on the results of this test, the hypothesis we propose is acceptable, where accounting conservatism has significant effect on the cost of equity capital.

To test our second hypothesis, we use the moderate regression analysis (MRA) approach, we compare the significance of the β_2 coefficient in equation (1) with the significance of the β_3 coefficient in equation (2) above. Based on the test, we obtained a β_2 coefficient of –0.889044 with a significance of 0.0167. Table 3 informs that the β_3 coefficient is 12.06165 with a significance of 0.0011. Based on this finding, we conclude that information asymmetry influences the relationship between accounting conservatism and the cost of equity capital. In other words, information asymmetry can interact with accounting conservatism and also become an independent variable for the cost of equity capital. These results also answer our assumption that managers will consider information in the capital market in determining their accounting policies, including accounting conservatism.

Our significant control consists of two variables, leverage and return volatility. Leverage coefficient is –0.430844, with a significance of 0.096 at the 10% level. Meanwhile, return on assets or ROA in our study proved insignificant to the cost of equity capital. The return volatility coefficient is 4.891461 with a significance of 0.0000 at the 1% level. The results of this study are consistent with research of Khalifa et al. (2019). For developing countries, a high level of volatility affects the cost of equity capital. This is indeed one of the characteristics of a developing country like Indonesia (Aggarwal et al., 1999). Based on the results of this test, the hypothesis we propose is acceptable, where information asymmetry plays a role in encouraging accounting conservatism, thereby reducing the cost of equity capital.

5 Discussion

Our study provides strong evidence of how accounting conservatism affects the cost of equity capital, and how information asymmetry can signal investors. Our study has also succeeded in confirming agency theory and pecking order theory. The agency relationship between principals and agents in Indonesia creates information asymmetry. The condition of agency relationship is stimulated by the ownership of companies in Indonesia which is dominated by family ownership. Conflict between minority and majority shareholders encourages information asymmetry. In addition, according to the pecking order theory, the emergence of information asymmetry is also indicated by the issuance of securities in the form of shares on the capital market. Thus, we conclude that capital market conditions in Indonesia are still dominated by high information asymmetry, weak investor protection, family-dominated ownership structures, and developing capital markets. We see this condition as one of the factors indicating the higher cost of equity capital in Indonesia than other countries in ASEAN. This

information asymmetry is then quickly responded by the manager if the market gives a negative signal. This indicates that accounting conservatism is still maintained in accounting practice in Indonesia, regardless of the pros and cons of its effect on firm value.

6   Robust tests

We perform robust tests. We measure the cost of equity capital with another alternative model, i.e., CAPM. CAPM is a measurement of the cost of equity capital that is widely used by researchers (Ingram and Targetis, 2010). Apart from measuring the cost of equity capital, CAPM is also useful especially in evaluating portfolio performance (Fama and French, 2004). The CAPM was introduced by Markowitz (1952), then used by Sharpe (1964). Mathematically, this model is formulated as follows:

$$COEC_{it} = R_f + \beta * (R_m - R_f)$$ (13)

where R_f is a risk-free investment that we propose with BI 7 Day repo rate. β is a systemic risk that cannot be eliminated through diversification by investors. We compute β through the slope of the regression of the stock's monthly returns and market returns. Rm is the return market. We use the composite stock price index return or IHSG as a proxy for market return. The following table informs the robust test results using both measurements, the CAPM and the Estrada model.

Table 4   Summary result of robust test

	Estrada model	*CAPM*
Dependent variable: cost of equity capital		
Constant	–1.258018	–7.503654
	(0.7645)	(0.0008) ***
Cscore	–0.370566	–0.297607
	(0.0007) ***	(0.0000) ***
Spread	–0.801175	–1.072733
	0.0203*	(0.0000) ***
Cscore * spread	12.06165	10.90926
	(0.0011) *	(0.0000) ***
Size	0.217124	1.184525
	(0.7349)	(0.0006) ***
Lev	–0.430844	–0.594008
	(0.096) **	(0.0000) ***
ROA	–0.041859	–0.403017
	(0.9144)	(0.0472) *
RTVOL	4.891461	2.161603
	(0.0000) ***	(0.0000) ***
Adjusted r square	0.2637	0.870107
Observation after adjustment	279	279

Notes: Figures in the parentheses are t-statistics, except for Breusch Pagan LM Test,
Hausman Test, which are p-values, * significant at level 0.05 ($p < 0.05$),
** significant at level 0.1 ($p < 0.10$), *** significant at level 0.01 ($p < 0.01$).

Based on Table 4, we obtain information on the efficiency of our main variable, accounting conservatism –0.297607 with a significance of 0.0000 at the 1% level. The coefficient of information asymmetry is –1.072733 with a significance of 0.0000 at the 1% level. The interaction coefficient of information asymmetry with accounting conservatism is 10.90926 with a significance of 0.0000. According to this, we conclude that in this robust test, our main variables inform consistent results. In addition, if we pay attention, in robust testing with CAPM, we find that all of our control variables are significant to the cost of equity capital. This confirms our first test using the Estrada model. Through the results of this robust test, we also conclude that using another measure, i.e., the CAPM model, can confirm agency theory and pecking order theory in the context of the Indonesian capital market. Agency theory works in the Indonesian capital market, where high information asymmetry will encourage high cost of equity capital.

7 Conclusions

This study aims to investigate the effect of accounting conservatism on the cost of equity capital. Then, we extended the test to see to what extent information asymmetry influencing these two variables. We focus on how the information asymmetry impacts financial statements, making them more conservative. Next, we also investigate how these conservative financial statements relate to the cost of equity capital.

As an effort to provide evidence, we use a sample of all issuers listed on the Indonesia Stock Exchange from 2016 to 2018 and consistently submit financial reports for that period. We managed to collect 200 issuers that we can observe. We chose Moderate Regression Analysis and panel regression to analyse the role of this information asymmetry. Our results provide strong empirical evidence that accounting conservatism has a significant influence and can reduce the cost of equity capital. In addition, the study we conducted also proved that information asymmetry is related to accounting conservatism and cost of equity capital. Information asymmetry plays a role and interacts with accounting conservatism as well as being an independent variable for the cost of equity capital. In other words, managers will consider information in the capital market in choosing accounting policies, including one of which is submitting conservative financial reports. The application of accounting conservatism will have a significant impact on the reduction of the cost of equity capital during conditions of high information asymmetry. Apart from providing empirical evidence, our study also confirms the two theories we described earlier, i.e., agency theory and pecking order theory. Both of these theories work in the conditions of the Indonesian capital market.

Our study is expected to have positive implications for investors, academics, managers and standard setters. For investors, this study is expected to provide empirical evidence that information asymmetry that occurs in the capital market can be used as a positive signal to measure the company's performance well, and of course measure the expected rate of return more realistically. For academics, our study is expected to contribute to the debate over the existence of accounting conservatism and confirmation of the role of information assumption in the relationship between accounting conservatism and cost of equity capital. For managers, our study is expected to provide empirical evidence on the importance of controlling the cost of equity capital as an effort to provide positive performance and even in relation to investment. Finally, we hope to

provide empirical evidence for standard setters and fill the debate between standard setters and academics. Here, we provide empirical evidence that accounting conservatism can reduce the cost of equity capital. Future studies are expected to accommodate a larger sample, use other proxies, and use other comprehensive analytical methods.

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