

Earning Quality, Information Asymmetry and Cost of Equity Capital in Manufacturing Companies

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Abstract—This study examines the direct and indirect impacts of earnings quality on cost of equity capital by using path analysis. The population in this study are manufacturing companies listed on the Indonesia Stock Exchange 2014-2016. Selected research samples were 108 manufacturing companies with purposive sampling technique. The results found that earnings quality had a significant negative effect on information asymmetry. Information asymmetry has a positive effect on the cost of equity capital. The test results also prove that information asymmetry has a role as a mediating variable. However, this study failed to find the direct effect of earnings quality on the cost of equity capital.

Keywords—earnings quality; information asymmetry; cost of equity capital; mediating

I. INTRODUCTION

The phenomenon occurs in the Indonesian capital market shows that stocks have a higher spread compared to several other stock markets, namely Thailand, Singapore, Malaysia, Hong Kong, New York and India. This high spread condition will decrease the liquidity of the stock market [1]. This phenomenon shows that in the Indonesian capital market, there is still a high level of information asymmetry.

In this regard, it is necessary to conduct research related to factors that influence information asymmetry. One of the factors that influence the level of information asymmetry is the quality of financial statement information reflected in the company's earning [2]. Earning information is information that is very important and relevant in making decisions related to investment.

According to Pramita, high-quality earnings must have three characteristics, namely being able to accurately reflect the company's current operational performance, be able to provide good indicators of the company's performance in the future, and can be used as a good measure to assess the company's performance [3]. Signaling theory reveals how a company should signal users of financial statements. Signals can be provided by the company through publication of quality earnings information.

Earnings quality is earning that correctly and accurately describes the operational profitability of the company. Earnings quality is a multidimensional concept [4]. There are at least

three factors that affect earnings quality, namely decisions taken by a standard-setting body (in this case the Indonesian Institute of Accountants), choices made by management regarding accounting methods that should be selected from various alternatives, and considerations and estimates compiled by management in applying the chosen accounting method. Quality earnings can reduce information asymmetry.

Some studies prove the relationship between earnings quality and information asymmetry. The results of research conducted by Lahaya et al. and Bhattacharya found that earnings quality had a significant negative effect on information asymmetry [5,6]. However, the results of research conducted by Damayanti and Nasih et al. found that earnings quality did not affect information asymmetry [7,8].

The existence of information asymmetry between management and shareholders will result in an increase in the cost of equity capital that must be borne by management. Costs of capital are the real costs that must be incurred by a company to obtain funds either from debt, preferred shares, common stock, or retained earnings to fund an investment or company operation. Determination of the amount of capital costs is intended to find out how much the real costs that must be incurred by the company to obtain the necessary funds.

Some studies prove the influence of information asymmetry on the cost of equity capital. The results of research conducted by Nasih, Dewi and Purwanto found that information asymmetry has a significant positive effect on the cost of equity capital [8-10]. Conversely, Heriyanthi found that information asymmetry has a negative effect on the cost of equity capital [11]. Meanwhile, research conducted by Perwira and Ifonie found no evidence of the influence of information asymmetry on the cost of equity capital [12,13].

Based on the background and the existence of gap research in the relationship between earnings quality, information asymmetry and cost of equity capital, this study aims to examine the effect of earnings quality on the cost of equity capital both directly and indirectly through information asymmetry as a mediating variable. Integrated testing will provide a comprehensive understanding of the relationship between earnings quality, information asymmetry and the cost of equity capital, which is beneficial for both investors and management.

II. METHODS

A. Population and Sample

The population of this study are all manufacturing companies listed on the Indonesia Stock Exchange in 2014-2016. The sample selection procedure is done by purposive sampling technique. The research sample was selected based on the following criteria: 1) issuing financial statements and 2) having complete data. Based on these criteria, there were 108 selected manufacturing companies used in this study.

B. Operational Definition of the Research Variable

The cost of equity capital is estimated by using the discount rate used by investors from future cash flow [14];[15];[16]. Ohlson's model is used to estimate the value of the company based on the equity book value plus the cash value of abnormal earnings, with the following formula:

$$P_t = y_t + \sum_{\tau=1}^T (1+r)^{-\tau} E_t \{x_{t+\tau} - (r)y_{t+\tau}\} \dots\dots\dots (1)$$

Where:

Pt: Share price in year t

Bt: Year's book value per share t

Xt + 1: Earnings per share on year + 1

r: Effectiveness of capital costs

To estimate earnings per share in the + 1-year model used as follows:

$$E(X_t + 1) = X_t + d \dots\dots\dots (2)$$

Where:

E(Xt + 1): Estimated earnings per share per year

Xt : Actual earnings per share in year t

D : Drift term which is the average change in earnings per share

Cost of capital estimates in equation (1) can be simplified to be as follows:

$$P_t = B_t + (1+r)^{-1} [x_{t+1} - r B_t] \dots\dots\dots (3)$$

Xt + 1: Year earnings per share t + 1 estimated by a random walk model like equation (2).

After mathematically simplified, equation (3) becomes:

$$(P_t - B_t) (1 + r) = (x_{t+1} - r B_t)$$

$$r = (B_t + x_{t+1} - P_t) / P_t \dots\dots\dots (4)$$

Earnings quality is measured using the dimensions of earnings management. The earnings management dimension is discretionary accrual, using absolute value of the performance-adjusted discretionary accruals (ADA) from [17]. The Kothari model controls the company's performance factor (ROA) from the Modified Jones's (1991) model [18].

The estimation assumes that all changes in credit sales are manipulations. The ADA captures the opportunistic actions of management over the financial statements so that it indicates the accuracy of the financial statements of the current operating performance. The higher the ADA value the lower the earnings quality. THERE is obtained from the absolute residual value of the following equation:

$$TACCI, t = \beta_0 + \beta_1 \frac{1}{ASSETi, t - 1} + \beta_2 \frac{(\Delta SALEi, t - \Delta ARi, t)}{ASSETi, t - 1} + \beta_3 \frac{PPEi, t}{ASSETi, t - 1} + \beta_4 \frac{ROAi}{ASSETi, t - 1} + \epsilon_i, t$$

Where:

TACCI, t: Total company accruals, namely earnings before extraordinary items minus operating cash flows (CFO) divided by the average total assets of company i and year t., I,

t-1 : Total assets of company i in year t-1.ASSETi,

t : Total assets of company i in year t.LESALEi, t: Change in sales of company i in year t.ΔARi,

t : Change in receivables of company i in year t.

PPEi, t: Value of property, plant, and equipment (fixed assets) of the company for the year t.

ROAi: Return on assets of company i in year t which is calculated by dividing net income of company i in year t with total assets of company i in year t.ei,

t: The residual error value of the firm i in period t is used as a basis for measuring the level of discretionary accrual (ADA).

Information Asymmetry is the difference in information obtained between one party and another in economic activities [19]. Measurement of asymmetric information is proxied by the bid-ask spread, with the following formula:

$$SPREAD_{i,t} = \frac{(Ask_{i,t} - Bid_{i,t})}{(Ask_{i,t} + Bid_{i,t}) / 2} \times 100$$

Where:

Ask: the highest ask price of the company's stock that occurred in the month t (December 31)

Bid: the lowest bid price of the company's stock that occurred in the month t (December 31)

C. Analysis Technique

Based on the theoretical model, this study uses path analysis with the following formulations:

$$IA = \alpha + \beta_1 EQ + \beta_2 Lev + \beta_3 Growth + \epsilon_1$$

$$COC = \alpha + \beta_4 EQ + \beta_5 IA + \beta_6 Lev + \beta_7 Growth + \epsilon_2$$

Where:

COC = Cost of equity capital
IA = Information asymmetry
EQ = Earning quality
Lev = Leverage
Growth = Growth

α = Constant
 $\beta_1, \beta_2, \beta_3,$
 $\beta_{4,5}, \beta_6,$
 β_7 = Regression coefficient
 $\varepsilon_1, \varepsilon_2$ = error term

III. RESULTS AND DISCUSSION

The two models in this study have passed the classical normality and assumption test. The normality test is carried out by skewness-kurtosis statistical test. The results of testing the regression Model 1 show that the Z-skewness value of -0.44 and Z-kurtosis is -1.85. The results of testing the regression Model 2 show that the Z-Skewness value is 1.25 and Z-kurtosis is 0.97. Because of the value of Z-skewness and Z-kurtosis <1.96, it can be concluded that the residual error is normally distributed.

The autocorrelation test results show that the value of durbinwatson in the Model 1 is 1.773. This value is between du at 1.7437 and 4-du at 2.2563. The results of the autocorrelation test in model 2 show that the value of durbinwatson is 2.234. This value is between du at 1.7437 and 4-du at 2.2563. Thus, it can be concluded that there is no autocorrelation in Model 1 and model 2. This study uses control variables, namely leverage and growth.

The results of multicollinearity testing show that all independent variables in Model 1 and Model 2 have tolerance values > 0.10 and VIF values <10. Based on these results, it can be concluded that there is no multicollinearity in either Model 1 or Model 2. Detection of heteroscedasticity in research this is done by the glejser test. The test results show that all variables have a significance value above 0.05, so there is no heteroscedasticity in Model 1 and 2.

A summary of the results of the Model 1 and 2 regression tests is presented in Table 1.

TABLE I. SUMMARY OF REGRESSION TEST RESULTS OF MODEL 1 AND 2

Description	Dependent Variable			
	Model 1 (IA)		Model 2 (COC)	
	Coefficient	Sig	Coefficient	Sig
EQ	-1.668	0.000***	.005	0.655
IA	-	-	0.001	0.038**
LEV	0.110	0.002***	0.005	0.000***
GROWTH	0.713	0.17	0.137	0.000***
Adj. Rsquare	0.228		0.744	
F-count	11.153		80.415	
Sig. F	0.000		0.000	

*** significant at the level of 1%

** significant at the level of 5%

The information in Table 1 shows the adjusted R2 value for Model 1 is 0.228, which means that 22.8% variation in information asymmetry can be explained by earnings quality, leverage and growth while the remaining 77.2% is explained by other variables not included in the research model. The calculated F value shows the number 11.153 with a significance value of 0.000, so it can be concluded that the research model 1 is suitable for use.

Adjusted R2 value for Model 2 shows a figure of 0.734 which means that 73.4% variation in the cost of equity capital can be explained by earnings quality, information asymmetry, leverage and growth, while the remaining 26.6% is explained by other variables not included in the research regression model. The calculated F value shows the number 80.415 with a significance level of 0.000, so it can be concluded that the research model 2 is suitable for use.

A. Result of Testing Hypothesis 1 (H1): Earnings Quality has a Negative Effect on Information Asymmetry

Table 1 shows that the earnings quality variable has a beta coefficient of -1.660 with a significance level of 0.000. These results indicate that earnings quality has a significant negative effect on information asymmetry. These results indicate that H1 which states that earnings quality negatively affects information asymmetry is accepted.

The implication of signaling theory in this study is that income is a positive signal for users of financial statements about the condition of the company. Companies that have higher earnings quality will reduce the level of information asymmetry. The results of this study support the research of Lahaya and Bhattacharya who found that earnings quality negatively affects information asymmetry [5,6].

B. Result of Testing Hypothesis 2 (H2): Information Asymmetry has a Positif Impact on Cost of Equity Capital

Based on Table 1, the result shows that the t count value is 0,001 with a significance level of 0.038. Because the significance level is less than 0.05 and the calculated value is positive, it can be concluded that information asymmetry has a significant positive effect on the cost of equity capital. It can be interpreted that H2 which states that information asymmetry has a positive impact on cost of equity capital is accepted.

The results of testing the second hypothesis indicate that information asymmetry has a positive effect on the cost of equity capital. This means a decrease in market liquidity and an increase in asymmetry of this information will lead to a high stock price, so the cost equity capital also increased. The implications of the bid-ask spread theory can be seen from that the cost of equity capital will be greater for securities with a wider bid-ask spread because investors demand a higher return to cover the additional transaction costs they incur. Publication of information conducted by companies can reduce adverse selection costs from the bid-ask spread so that the cost of equity capital also falls. This finding supports research's conducting by Nasih, Dewi, Purwanto and Perwira who found that information asymmetry had a significant positive effect on the cost of equity capital [8-10,12].

C. Result of Testing Hypothesis 3 (H3): Earnings Quality has a Negatif Impact Onon the Cost of Equity Capital

The test results of Model 2 show that the value of beta coefficient on the earnings quality variable is -0.005 with a significance level of 0.665. This finding shows that earnings quality has a positive, but not significant effect on the cost of equity capital. It can be interpreted that H3 which states that

the quality of earnings negatively affects the cost of equity capital is rejected.

Based on testing the third hypothesis, it can be seen that earnings quality does not affect the cost of equity capital. This indicates that earnings quality does not have a direct effect on the cost of equity capital. These results support the research conducted by Nasih and Ifonie, which shows that earnings quality does not directly affect the cost of equity capital [8,13].

D. Result of Testing Hypothesis 4 (H4): Information Asymmetry Mediates the Relationship Between Earnings Quality and the Cost of Equity Capital

The mediation effect test is done by comparing the results of the beta coefficient between the direct effect of earnings quality on the cost of equity capital and the indirect effect of information asymmetry as a mediating variable. The amount of direct influence of earnings quality on the cost of equity capital is equal to 0.005 but not significant. The indirect effect of earnings quality on the cost of equity capital is $1.668 * 0.001 = 0.001668$. It can be concluded that H4 states that information asymmetry mediates the relationship between quality of earnings and the cost of equity capital is accepted.

These results indicate that earnings quality have indirect effect on the cost of equity capital. Earnings quality affects the amount of the cost of equity capital through information asymmetry. Earnings quality will reduce the cost of equity capital when earnings quality can reduce information asymmetry. This finding supports the results of research conducted by Bhattacharya and Nasih, which proves that information asymmetry mediates the relationship between earnings quality and the cost of equity capital [6,8].

IV. CONCLUSION

This study examines the direct and indirect effects of earnings quality on the cost of equity capital. The results of the study show that earnings quality has a negative effect on information asymmetry and information asymmetry has a positive effect on the cost of equity capital. However, this study failed to find the direct effect of earnings quality on the cost of equity capital. The results show that earnings quality can affect the cost of equity capital indirectly through information asymmetry.

This study has several limitations that might reduce the usefulness of the results of this study. Data behavior tends to be abnormal, causing a decrease in the number of companies sampled in this study. A total of 108 data were processed in this study, from 204 selected data in the initial process. The results of the research on model 2 also showed a relatively low R² value of 22.8%. To overcome existing limitations, future research is recommended to extend the observation period and add other variables that are considered to affect the cost of equity capital such as stock liquidity, stock beta, etc.

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