
**THE EFFECT OF BETA, SIZE, AND EARNINGS MANAGEMENT ON
COST OF EQUITY**

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ABSTRACT

This study aims to determine what factors influence investors' investment decisions (cost of equity). The independent variables are stock beta, company size, and earnings management. This research uses a purposive sampling technique. The sample used in this study was 150 samples from 30 companies for five years from 2012-2016. The data comes from the annual financial reports of companies listed on the Indonesia Stock Exchange. This study uses linear regressions to analyze data. The results showed that stock beta and firm size affected the cost of equity, while earnings management did not affect equity.

Keywords: stock beta, firm size, earnings management, and cost of equity.

I. Introduction

Indonesia's economic growth in 2012-2016 experienced stable growth. However, Indonesia's stable economic growth rate is not comparable to the investment growth rate in Indonesia. In general, an investor, especially a foreign investor, will look for a country with a high or most unstable economic growth to reduce the risk impact on investment. This phenomenon that occurs in Indonesia encourages researchers to research what factors influence investment decisions.

Cost of equity is an essential factor for companies, especially in terms of making investment decisions. The cost of equity is also essential because it is the basis for making comparisons in evaluating investment opportunities. Therefore, companies must maintain their cost of equity at a reasonable or reasonable level. If the cost of equity is too high, the company will have to forgo some potential investment. The cost of equity is the rate of return desired by investors on capital investment in a company.¹

Swee and Kim (2013) state that the cost of equity is an essential input to calculate the cost of capital. The improper use of the cost of equity can have serious consequences such as loss of market share or market value loss. If the estimated cost of equity is too high, it can lead to the rejection of promising investment opportunities. Meanwhile, the estimated cost of equity that is too low can decrease investment value. So it can be concluded that the result of the model's improper application to estimate the cost of equity will result in losses.

As previously explained, the cost of equity is the return rate expected by investors (return). Koewn et al. (2002) mention the principle of The Risk-Return Trade-Off, which contains high-risk, high returns, where the higher the level of risk in an investment, the higher the return

¹ Aswath Damodaran, *Investment Valuation: Tools and Techniques for Determining the Value of Any Asset*, 2nd Edition. (New York: John Wiley & Sons, Inc., 2000), 182.

expected by investors, and vice versa. So it can be said that the risk is directly related to the cost of equity.

In general, risk consists of systematic risk and non-systematic risk. Systematic risk is also known as market risk or beta. The beta of security shows the sensitivity of a security's profit level to market changes. A high beta of a company will result in a high return rate desired by investors (return). It is because investors expect high compensation for their availability to bear high investment risks. So it can be concluded that a high company beta will increase the cost of equity.

One of the most remarkable discoveries in modern finance is the relationship between firm size and return rate. Company size is the grouping of a company into large, medium, or small size categories. The total assets owned by large companies are generally more extensive than that of small companies to attract investors to invest their funds. Larger companies can return a higher rate, and creditors are also more confident in making loans because of the smaller credit risk. A smaller company will have a higher risk (beta) and return than a company with a large scale to affect the cost of equity.²

Apart from stock beta and firm size, many studies analyze the relationship between earnings management and equity costs. Investors focus information on earnings as a consideration in investment decisions. The benefit of accounting information by investors is to value stocks to encourage managers to manipulate earnings. The practice of earning management will increase the risk of investment. Balvers (2009) explains that agency theory is the foundation underlying information risk. The difference in interests between agent and principal creates information asymmetry. Information asymmetry is a condition where there is an imbalance in information acquisition between the agent and the principal. When the information provided by the agent is accurate and precise, it will increase investor confidence in making investment decisions. Increased investor confidence will reduce the risk perception of the investment so that investors will expect low returns and directly reduce the cost of equity.

From the explanation above, the framework in this study is as follows:

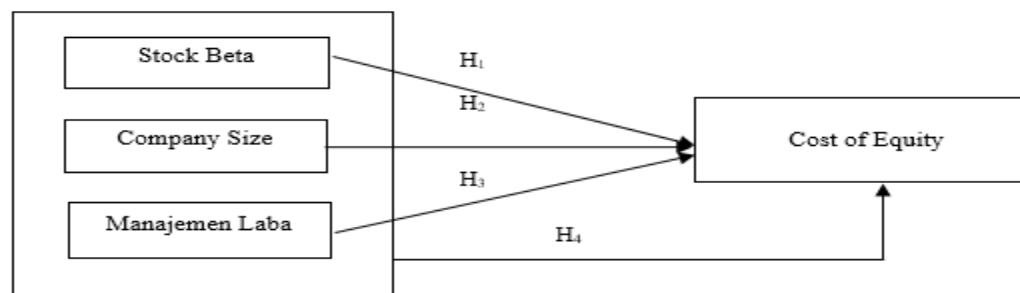


Figure 1. Framework

² Shannon, *Cost of Capital: Estimation and Applications*, 2nd Edition. (New Jersey: John Wiley & Sons, Inc., 2002), 91.

The hypothesis of the model built above is as follows:

H1 = Stock beta has a positive effect on the cost of equity.

H2 = Firm size has a positive effect on the cost of equity.

H3 = Earnings management has a negative effect on the cost of equity.

H4 = Stock beta, firm size and earnings management simultaneously affect the cost of equity.

2. Methodology

The research design used in this research is causal research because, in this study, many factors affect the cost of equity. This type of research used in this research is quantitative. The data analysis technique used in this research is regression analysis, and the funds used are panel data. This study used 150 samples consisting of 30 companies for five years from 2012-2016. The data used in this study are the financial statements of companies listed on the Indonesia Stock Exchange and data from the Damodaran website and the Indonesia Bond Pricing Agency (IBPA). The sample selection was carried out by a purposive sampling method and using linear regressions to analyze the data.

The dependent variable used in this study is the cost of equity. The cost of equity in this study is measured using the CAPM method. The CAPM method measures market risk using the beta. There are three elements in the CAPM, namely risk-free interest (risk-free rate), systematic investment risk (beta), and market risk premium (market risk premium), resulting in the following equation model:

$$R_{it} = R_{ft} + \beta_i (R_{mt} - R_{ft}) \quad (1)$$

The independent variables used in this study are stock beta, company size, and earnings management. Stock beta is measured in this study using data sourced from the Damodaran website and the Indonesia Bond Pricing Agency (IBPA). The equation model in measuring stock beta is as follows:

$$\beta_i = \frac{\sum (R_{it} - E(R_{it})) \cdot (R_{mt} - E(R_{mt}))}{\sum (R_{mt} - E(R_{mt}))^2} \quad (2)$$

This study refers to Agustini's research (2015), which uses a method of determining company size with the logarithm's proxy value of total assets (Ln Total Assets). Researchers use a total accrual approach to predict earnings management. It refers to Friedland's method (in Hendra, Yie: 2005) developed by Healey and DeAngelo. Healey and DeAngelo argue that total accruals consist of discretionary accruals and non-discretionary accruals, where total accruals are not easily detected. Thus earnings management with the following formula:

$$DAC_{PT} = \left(\frac{TAC_{PT}}{Sales_{PT}} \right) - \left(\frac{TAC_{PD}}{Sales_{PD}} \right) \quad (3)$$

Where the total accruals formula is:

$$TACPT = NIPT - CFOPT$$

Information:

DACPT: discretionary accruals during the test period

TACPT: total accruals during the test period

Sales PT: sales in the test period

TACPD: total accruals in the previous period

Sales PD: sales in the previous period

NIPT: operating net profit in the test period

CFOPT: cash flow from operating activities at the end of the test period

The tool of the researchers will use data panel regression analysis with Eviews 9 software. The regression equation in this study is as follows:

$$COE = \beta_0 + \beta_1BS + \beta_2UP + \beta_3ML + \epsilon \tag{4}$$

Information:

COE: The company's cost of equity

BS: Stock Beta

UP: Company size

ML: Earnings Management

β_0 : intercept

ϵ : error

3. Result

The analysis was carried out on 30 companies for five years as many as 150 samples from 2012-2016. Descriptive statistics used to provide an overview of the minimum value, maximum value, average value, and standard deviation of the variables studied, namely the cost of equity, stock beta, company size, and earnings management. The results of the descriptive statistics obtained from this study, with the help of Eviews 9 software, showed in Table 1.

Table 1. Descriptive Statistics Result

	COE	BS	UP	ML
Mean	16.90223	0.984020	30.01008	0.033053
Median	17.22165	1.002474	29.82934	0.003368
Maximum	21.04321	1.361780	32.82181	13.73440
Minimum	12.84261	0.333490	28.20675	-13.92534
Std. Dev.	2.017075	0.241481	1.077698	1.700326

Table 2. Regression Results based on the Least Square Panel Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.862414	3.589959	0.518784	0.6047
BS	6.554900	0.500772	13.08959	0.0000
UP	0.286113	0.112168	2.550747	0.0118
ML	0.102058	0.065423	1.559966	0.1209
R-squared	0.556573	Mean dependent var		16.90223
Adjusted R-squared	0.547461	S.D. dependent var		2.017075
S.E. of regression	1.356907	Akaike info criterion		3.474597
Sum squared resid	268.8145	Schwarz criterion		3.554880
Log likelihood	-256.5948	Hannan-Quinn criter.		3.507213
F-statistic	61.08449	Durbin-Watson stat		1.902759
Prob(F-statistic)	0.000000			

Source: Secondary data processed by Eviews 9

Based on Table 2, the researchers formulated the panel data regression equation as follows:

$$COE = 1,862414 + 6,554900BS + 0,286113UP + 0,102058ML + 0,443427 \quad (5)$$

From the regression equation above, the constant value is 1.862414. It indicates that if the variables of stock beta, company size, and earnings management are equal to zero or negligible, then the cost of equity is 1.862414. The value of the share beta coefficient is 6.554900. It is positive, which means that each increase in the stock beta of 1 unit will increase the value of the cost of equity by 6.554900, assuming the value of company size and earnings management is constant. The coefficient value of company size is 0.286113. It has a positive value, which means that any increase in company size by unit 1 will increase the value of the cost of equity by 0.286113, assuming the beta value is the same, and earnings management is constant. The value of the earnings management coefficient is 0.102058. It is positive, which means that each increase in earnings management of 1 unit will increase the cost of equity value by 0.102058, assuming the beta value is the same, and the firm size is constant.

The results shown in Table 2 showed to test the hypothesis either simultaneously or partially with a significant level of 5%. The t-test (partial) is a test used to partially test the independent variable's effect on the dependent variable. The results in Table 2 on the BS variable show a probability of 0.00000 < 0.05 to accept the H1 hypothesis. Thus the stock beta variable has a positive effect on the cost of equity. The results show that stock beta positively affects the coefficient value of 6.554900, which shows positive results. It means that the bigger the stock beta, the greater the cost of equity, and vice versa.

This result is under the principle of The Risk-Return Trade-Off³, which contains high-risk, high returns. The increasing level of beta risk will encourage investors to expect high compensation for this risk (return) due to investors' availability to accept this risk. These results are consistent with the results of research conducted by Yati (2017) and Fahdiansyah (2016) but are not in line with research conducted by Mukhammad (2013), Yosi (2016), and Hutapea (2010).

The firm size variable shows a probability of $0.0118 < 0.05$ so that the H2 hypothesis is accepted. Thus the firm size variable has a positive effect on the cost of equity. The results show that company size positively affects the coefficient value of 0.286113, which shows positive results. It means that the larger the company's size, the greater the cost of equity will be, and vice versa. These results are consistent with Ibbotson's (2001) research, which shows that the larger the company size, the smaller the risk level that will arise, which will reduce the cost of equity. Also, large companies will have long-term prospects that are more stable and more able to generate profits, reducing the risk of bad credit and investment risk. This risk reduction will result in a low return so that it will reduce the cost of equity⁴. These results are consistent with the results of research conducted by Fahdiansyah (2016), Mukhammad (2013) and Imran (2012). However, this study's results are not in line with research conducted by Aisa (2016) and Sukarti (2018).

The earnings management variable shows a probability of $0.1209 > 0.05$, so the hypothesis H3 is rejected. Thus the earnings management variable does not harm the cost of equity. The results show that earnings management positively affects the coefficient value of 0.102058, which shows positive results. It means that the greater the earnings management, the greater the cost of equity will be, and vice versa. Investors have anticipated the existence of earnings management carried out by the company so that investors do not only look at the financial statements results but see other factors in making decisions to invest in the company. So it can be said that earnings management practices do not always affect the cost of equity. This study's results are in line with research conducted by Ifonie (2012) and Adi Baskara (2015). However, they are not in line with the results of research conducted by Imran (2012), Mukhammad (2013), and Sofia and Jeffry (2016), which state that earnings management affects the cost of equity.

F test (simultaneous) is a test used to test the effect of independent variables simultaneously on the dependent variable. The results in Table 2 show that the Prob (F-statistic) is $0.000000 < 0.05$, so H4 is accepted. Thus the variables of stock beta, firm size, and earnings management simultaneously influence the cost of equity. The value of R2 is 0.556573, which explains that stock beta, company size, and earnings management can only affect the cost of equity by 55.6573%, while other variables influence the remaining 44.3427%.

³ Keown *et al*, *Financial Management: Principles and Application*, 9th Edition. (New Jersey: Pearson, Inc., 2002).

⁴ Source: Stock, Bonds, Bills and Inflation® Valuation Edition 2001 Yearbook (Chicago: Ibbotson Associates, 2001), p. 123. in Shannon, *Cost of Capital: Estimation and Applications*, 2nd Edition. (New Jersey: John Wiley & Sons, Inc., 2002), 91.

4. Discussions

This study examines the effect of stock beta, company size, and earnings management on the cost of equity in 30 companies listed on the Indonesia Stock Exchange in the period 2012-2016 for five years by producing a sample of 150. Based on the results of the analysis and discussion in this study, conclusions were drawn. First, hypothesis testing results show that stock beta has a positive effect on the cost of equity. Stock beta is a systematic risk or market risk that cannot be eliminated by diversification. The availability of investors to accept a high risk must be compensated for by a high return, which will increase the cost of equity. It is in line with the high-risk, high return principle, where a high risk will result in a high return.

Second, hypothesis testing results show that firm size has a positive effect on the cost of equity. These results are consistent with Ibbotson's (2001) research, which shows that the larger the company's size, the smaller the risk and decreased cost of equity. Large companies will have more creditor and investor confidence to reduce the impact of risk, and large companies are more stable and have long-term prospects.

Third, the results of hypothesis testing show that earnings management does not affect the cost of equity. Investors worry about earnings management practices that cannot influence investors' decisions in investing in a company. Investors may pay attention to other factors, such as voluntary disclosure, information asymmetry, audit quality, and others.

Researchers in conducting this research have limitations such as researchers using the 2012-2016 sample, which should use a more updated year. The next researcher expects to use a more updated sample of years and use other factors to be studied, such as information asymmetry, inflation rate, voluntary disclosure, audit quality, and others.

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