

Firm Information Quality and The Cost of Equity Capital in Indonesia

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The purpose of this research is to analyse the effect of firm information quality, which is known by calculating the ratio of firm stock return and firm earnings growth on the cost of equity capital in Indonesia. The sample consists of Indonesian firms through the years 2003 until 2015. The measure used for the proxy of firm-specific information is by seeing the firm information quality from the stock return and stock earnings. We are using an unbalanced panel data regression after including some control variables (capital asset pricing model beta and the firm age). The findings of this research conclude that the firm-specific information (ratio of firm stock return and firm earnings growth) has no significant effect on the cost of equity capital in Indonesia from 2003-2015. This is different from the hypothesis that firm specific information has a significant negative impact on the cost of equity capital.

Key words: *Firm Specific Information, Information Quality, Earnings Quality, Stock Return, Cost of Equity Capital.*

Introduction

Indonesia's equity and bond market activities have increased significantly since late 2016 and early 2017. Through the first 10 months of 2017, the Jakarta Composite Index (JCI) – the Indonesia Stock Exchange (IDX) market benchmark – expanded by 13.39%, making it one of the best performing major indices in the world. The JCI in 2007 was 2745.83 and doubled in 2017 at 6355.65. In the long run, the JCI performance is satisfying because it can always beat the long-term inflation rate in Indonesia. This implies that the stock market in Indonesia is good, which makes domestic and foreign investors attracted to invest in Indonesia (Triggs et al., 2019).

According to Barth et al. (2013), the cost of equity capital is the rate of return a firm pays to its equity investors to compensate for the risk they undertake by investing their capital in the firm. The required return is a premium for holding a risky asset, and the return is required to be superior to the return obtained by investing in a risk-free asset (Ross et al., 2012). A company's side, the cost of capital, is a cost that has to be paid by them as a replacement for the investor's

capital. Therefore, the cost of capital's size is dependent on the source of funds used in running the company (Berk & DeMarzo, 2014). In conclusion, the cost of equity is the expected return that shareholders of a firm demand, of which firms would like to pay the least possible. A company's securities typically include both debt and equity, and one must therefore calculate both the cost of debt and the cost of equity to determine a company's cost of capital. When companies borrow funds from outside lenders, the interest paid on these funds is called the cost of debt. The cost of equity is inferred by comparing the investment to other comparable investments with similar risk profiles, or it can also be estimated from the capital asset pricing model (Barth et al., 2013; Berk & DeMarzo, 2014; Ross et al., 2012; Sharpe, 1964).

There are many studies of what the corporate governance of a firm should do to increase a firm's performance or reduce the cost of equity capital defined by the financial information disclosure, that correct uninformed investors' perception of the current and future performance of the company and reduce information asymmetry. Thus, high quality financial reporting improves the firm's value, its performance and reduces the cost of equity capital (Apergis et al., 2011; Iatridis, 2018; Healy & Palepu, 2001). Higher quality information could reduce the extent of adverse-selection problems between traders.

So what is firm-specific information? Firm-specific returns of a firm have generally been regarded as "noise"; distorted information is regarded as noise (Black, 1986). Morck et al. (2013) and Roll (1988) state that the low R-squared of popular asset pricing models could be consistent with noise in prices. While Jiang et al. (2009) and Morck et al. (2000) found in theoretical research that firm-specific volatility is associated with less information. Several recent papers try to link firm-specific returns to economic efficiency.

Consequently, a firm has better control in its cost of equity capital. This can be achieved by lowering a firm's cost of funds from both debt and equity. Morck et al. (2000) states that greater firm-specific price variation or less synchronicity of returns across firms, causes more firm-specific information. This implies less co-movement in stock returns across firms. Wongchoti et al (2011) find that firms and industries with lower market model R² statistics have higher association with current year dividend change, dividend announcement, and future earnings. On the contrary, Durnev et al (2004) finds a positive relation between firm-specific variation in stock returns and a measure of corporate investment efficiency (Farichah, 2017).

Berger et al. (2018) contribute to that literature by decomposing firm-specific stock returns into firm-specific cash flow news and information quality. Based on previous research findings, it could be concluded that firms could have high firm-specific return variation due to high firm-specific cash flow variation or high quality of information. High-quality information attracts investors to trade more frequently. As a result, the firm doesn't need to offer a high cost of equity capital.

Chen et al. (2011) showed that in a developed market, the cost of equity capital is negatively related to firm-specific information. Increasing the quality of public information reduces informational asymmetry; this in turn increases liquidity and, as a result, reduces the cost of capital. Perhaps consistent with these observations by Easley & Hara (2001), most of the researches show strong negative relations between proxies for information quality and proxies for the cost of capital.

An empirical process of this research consists of three steps. First, the researchers construct the information quality using firm-specific stock returns and cash flows. Second, the author measures cost of equity in using the (Fama & French, 2001) to prove their relationship with firm-specific information. In this research, the author examines all of Indonesian publicly listed companies that are listed in the IDX. In developed markets, results should be clearly in favour of a negative relationship since, as has been stated by all of the previous researchers that firm-specific information is negatively related to the cost of equity capital. In fact, the information quality across each firm in an emerging country like Indonesia is different due to its fragile corporate governance rule. Some firms will tend to distinguish themselves by providing more superior financial information quality than the average (Dakhlaoui et al., 2017). The disclosure of financial information is less trustworthy and less transparent (Botosan & Plumlee, 2005; DIAMOND & VERRECCHIA, 1991; Farichah, 2017; Lambert et al., 2007). This is the motivation for the authors to do this research to examine the effect of firm specific information quality on the cost of equity capital in Indonesia. This research is then given the title Firm Information Quality and The Cost of Equity Capital in Indonesia.

Research Problem

Past studies by Chen et al (2011), Diamond & Verrecchia, 1991, Easley & Hara, 2001) showed that increasing the quality of public information reduces informational asymmetry; it increases liquidity. As a result, it reduces the cost of capital. Those previous researches are done mostly in a developed country, rarely in an emerging country. Different markets share different characteristics on the economy, equity market, firm management system, corporate governance rule, and others. Emerging markets like Indonesia are characterised by a low level of corporate disclosure (27) and weak shareholder's rights protection (La Porta et al., 1998).

Moreover, because of the weak shareholder's rights protection, financial information is mostly unregulated, and IFRS is still not fully adopted, which is why the numbers that are given regarding the information by the firm are not of good quality or not all correct (Dakhlaoui et al., 2017). Based on the research problem above, the research question for this research is as follows:

Does information quality affect Indonesian firms' cost of equity capital?

Literature Review

Risk and Return

Investors can estimate returns in the future, which is not yet known exactly in value because of the uncertainty based on certain models. Uncertainty occurs because not enough information is available to be used as a basis for decision making. Therefore, the less information received, the higher the investor's expectation for compensation in the rate of return (Grossman & Stiglitz, 1980; Sharpe, 1964). In general, the previous researches show high-risk, high return; low risk, low return (Berk & DeMarzo, 2014; Ross et al., 2012; Sharpe, 1964). Investors relate low levels of uncertainty with low potential returns, and the other way around, where high levels of uncertainty or risk correlate with high potential returns. Human beings are usually rational and prudent, preferring safety over risk. They must be thinking of what they could get in exchange of the risk they take. Investors naturally require an extra reward as a compensation to place their capital in a riskier investment instead of a safer one: instead of putting their capital in a certain company, they could invest their money on government bonds or save in a bank, which of course have a lower risk. There are several types of risks. Risk takes on many forms and is broadly defined as the chance an investment's actual return will differ from the expected return.

Risk includes the possibility of losing some or all of the original investment. Whereas return, also known as a financial return, is the money made or lost on an investment. A return can be expressed as a percentage derived from the ratio of profit or loss to investors. Risk in this research is considered as anything related to the firm's information, while the return is related to the firm's cost of equity capital. The author is going to show the effect of firm information quality on the cost of equity capital in Indonesia by observing all of the publicly traded firms in Indonesia as the sample.

To conclude, risk happens due to uncertainties in the business world. Good quality information is needed to get an idea of the risks investors are exposed to, along with the return in the future. Investors will respond to high risk by asking high returns. Thus, firms must reduce risk by providing high information quality. The theoretical reason why that happens will be discussed further below.

Information Asymmetry and Cost of Capital

The firm's financial statements must provide accurate and transparent information –otherwise, this would create uncertainty among shareholders. As a result, the stock price could change due to uncertainty or created risk (Griffin, 2015; Ou & Penman, 1989). Thus, shareholders would demand a higher risk premium, and hence the firms' cost of capital increases. Grossman & Stiglitz (1980) and Lambert et al. (2007) found that in a competitive market, information

asymmetry does not necessarily negatively affect the cost of capital. The logic behind it could be explained in the following example: assume that in a capital market there are two investors A and B. Investor A has less information about the stocks of firms in the market. He chooses to hold fewer securities because the uncertainty he is exposed to is higher. Investor B obtains more information about the same security. The uncertainty he is exposed to is less compared to investor A. Investor B has different expectations than investor A. Therefore, he can buy more financial instruments, which will imply a change in the price. The uncertainty of the less informed investor will decrease because he perceives through the price, which contains the new information that has appeared in the market. Hence, being in a competitive market, information asymmetry does not necessarily negatively affect the cost of capital.

Information Disclosure and Cost of Capital

There are at least two old theoretical reasons why increased disclosure can improve information quality. Barry & Brown (1985) declare that information disclosure is increased by reducing parameter uncertainty, while information disclosure reduces the adverse selection problems between traders. To make a good investment decision, investors obviously need good quality information of a firm, i.e., annual report, financial statement. Due to the fact that investors provide capital for the companies, their decision making process is related to the purchase, holding, or selling of the stocks.

Consequently, existing shareholders or prospective investors are the main users of the firm's financial statements because they expect to obtain perfect, transparent and exact information from the companies to make the investment decisions (Lambert et al., 2007)

Financial theory affirms that disclosure of the information about the company impacts its cost of capital. There is a relationship between the disclosure, liquidity, and cost of capital. They concluded that there is a negative relationship between the disclosure level and the cost of capital: the greater the disclosure level, the lower the cost of capital. Easley & Hara (2001) and Easley & O'Hara (2004) have concluded that investors who have less information demand higher returns for the stocks they are invested in. This is due to the risks the investors are exposed to caused by private information or information asymmetry. This element was proposed by Lambert et al. (2007) and Leuz & Verrecchia (2000), who argue that poor quality reporting creates information risk, which is related to worse coordination between firm and investors. This risk has a negative impact on expected returns, which in turn increases the cost of capital.

Firm-specific Information and Information Quality

So, what is firm-specific information? Firm-specific returns have generally been regarded as "noise" (Roll, 1988). According to Black (1986), "noise" means the opposite of information;

such as hype, and it is hard to differentiate from information. Roll (1988) stated that the low R-square of popular asset pricing models could be consistent with noise in prices. While Ross et al. (2012) stated that firm-specific volatility is associated with less information. Some previous research tried to find the relationship of a firm-specific return with economic efficiency. Economic efficiency means that a firm has better control of its cost of equity capital. This could be achieved by lowering the cost of funds from debt or equity. Morck et al. (2000) stated that greater firm-specific price variation in stock price or less synchronicity of returns across firms, leads to more firm-specific information and thus less co-movement in stock returns across firms. This means that the greater the variation in the price, the more it will generate firm specific information. Morck et al. (2013) found that firms and industries with lower market model R-square statistics have a higher association between current returns and future earnings. But Durnev et al (2004) find a positive relation between firm-specific variation in stock returns and a measure of corporate investment efficiency. To conclude, these theories are in line with the firm-specific information argument where the lower the R-squared, the higher the association between current return and future earnings. This implies more variation in stock prices and more firm specific information generated.

There is a studied relationship between earnings quality and the cost of equity capital. Earnings quality is related to information quality. Berger et al. (2018) conclude all past literatures by decomposing firm-specific stock returns into firm-specific cash flow news and information quality. Firms could have high firm-specific return variation because it has high firm-specific cash flow variation or high information quality. Hence, the author can measure the information quality or firm-specific information by calculating the ratio of firm-specific return variation to the firm-specific cash flow variation.

Hypothesis Development

This research has 1 dependent variable, which is the firm cost of equity capital (COC). The independent variable is the firm-specific information (INFO) along with a few control variables, which are the CAPM beta (BETA) and the firm age (AGE). As previously discussed in the first chapter, some research gaps still leave the author wondering about the effect of firm-specific information to the cost of equity capital. Uncertainty occurs because not enough information is available to be used as a basis for decision making. Therefore, the less information received, the higher the investor's expectation in the rate of return. Investors always rely on information in analysing the potential reward of a business. The business world is full of uncertainties. Good quality information is needed to make good financial or investment decisions. Investors will ask high compensation for high risk. The rate of return expected by investors are capital costs that have to be paid by the company. Therefore, to maximise the value of a company, it is necessary to lower the cost of capital of a firm by providing certainty or good quality information to investors (Lambert et al., 2007).

Previous research by Berger et al. (2018) mentioned that high information quality could be associated with a lower cost of equity capital. This is due to the greater disclosure level of information given by a firm that could cause a lower cost of capital. Understanding the level of disclosure is not only focussed on the quantity but also the quality of disclosure itself. A high level of disclosure implies low information asymmetry. Investors will have confidence in a company, and they tend to estimate lower risk. Botosan & Plumlee (2005) and Jensen & Meckling (1976) found that the risk level reflects the rate of return for investors, which in turn will lower the company's cost of equity.

On the other hand, previous research done by Grossman & Stiglitz (1980) and Lambert et al (2007) show a different result. In a competitive market, information asymmetry does not necessarily negatively affect the cost of capital. An emerging market is also characterised by a low level of corporate disclosure and a weak minority shareholder's right protection (Boubaker & Nguyen, 2012; La Porta et al., 1998). Moreover, because of the low level of corporate disclosure, financial information is mainly unregulated (Dakhlaoui et al., 2017). That is why the financial information disclosed in the financial statements by a firm is not all correct. Based on the above previous research and literature, the author develops a hypothesis in this research as follows:

H1: Firm information quality has a significant negative effect on the cost of equity capital in Indonesia.

Methods

Following Berger et al. (2018), the author uses personal stock returns and idiosyncratic operating earnings to obtain a measure on firm-specific information quality (INFO) as an independent variable. Besides, there are some other control variables, such as firm age (AGE) and CAPM beta (BETA). The dependent variable is the cost of equity capital (COC) – obtained from (Fama & French, 2001). The research model is as follows:

$$COC_{it} = \alpha_{it} + \beta_1 INFO_{it} + \beta_2 AGE_{it} + \beta_3 BETA_{it} + \epsilon_{it}$$

Descriptive Statistics and Correlation

According to (Black 2010), the descriptive statistical analysis is the visual explanation of each of the data from the sample. It shows the number of observations, mean, standard deviation, as well as the maximum and minimum points of the tested variables. Within the 13-year scope of the research from 2003- 2015, there are 301 companies used as a sample in Indonesia in a total of 28,314 observations. Table 1 shows the collective descriptive statistic results for all the listed companies in Indonesia. The IVOL return means is 0.1612724% which means that the firm-specific return at any given year between 2003 to 2015 for most of the sampled companies is

considered very small. Although the number is low, the positive return indicates that most of the Indonesian firms are generating positive returns; the firm-specific stock returns are positive.

Table 1. Collective Descriptive Statistics Results

Variable	Obs	Mean	Std. Dev.	Min	Max
Company	28314	-	-	1	301
Year	28314	-	-	2006	2015
ri return	28314	0.038967	0.323458	-0.81	2.100002
rm return	28314	0.012680	0.054895	-0.153945	0.146269
rI return	28314	0.008536	0.069968	-0.169620	0.510406
residual return	28314	-0.000558	0.092007	-0.365210	0.510854
IVOL (return)	28314	0.161272	0.145697	0.003977	0.846989
Return R2	28314	0.854518	0.220822	0.011473	0.999992
ri earnings	2365	0.454635	3.023793	-8.724568	20.254690
rm earnings	2365	0.001068	0.007298	-0.021064	0.050584
rI earnings	2365	0.129671	0.775296	-1.404628	6.441986
resid earnings	2365	0.001125	0.137802	-0.652018	0.610418
IVOL (earnings)	2365	0.185722	0.187864	0.002770	1.030078
Earnings R2	2365	0.991446	0.022769	0.833909	1
COEC	28314	0.005306	0.089391	-0.362206	0.442428
Information	28314	0.920445	1.437296	0.00000002	7.402900
Beta	28314	0.145667	0.061064	0.030924	0.257680
Firm Age	28314	7.604844	0.000977	7.604396	7.608374

Source: Processed by an author (2018)

Meanwhile the IVOL earnings mean is 0.1857223%, which is also small. It is slightly bigger than the IVOL return. The positive number indicates that most of Indonesian firms' operating earnings growth is positive. It can be concluded briefly that mostly firm-specific returns and earnings growth in Indonesia are small, where most of the investors in Indonesia put their weight on the industry earnings.

The author collects data from each firm's monthly stock return, market value-weighted return, and Fama-French industry weighted-average return to get IVOL return. The minimum firm's monthly return is -0.81, and the maximum return is 2.1, while the mean is 0.04. The minimum market value-weighted return is -0.154, and the maximum is 0.1463, while the mean is 0.01268. The minimum Fama-French industry weighted-average return is -0.1696, and the maximum is 0.5104, while the mean is 0.00854. All of the return means are positive, and they all have small variance in their return numbers indicated by the low standard deviations. The author must also collect data from each firm's operating earnings, i.e., yearly growth rate, market's annually weighted-average earnings growth rate, and Fama-French industry's annually weighted-average earnings growth rate to get the IVOL earnings. The minimum firm's yearly earnings growth rate is -8.725, and the maximum is 20.255, while the mean is 0.4546. The minimum market's yearly weighted-average is -0.0211, and the maximum is 0.0506, while the mean is 0.00107. The minimum Fama-French industry's yearly weighted-average earnings growth rate is -1.4046, and the maximum is 6.442, while the mean is 0.1297. There is a huge variation in both firm's yearly earnings growth rate and Fama-French industry earnings growth rate, where the standard deviation is 3.024 and 0.7753 respectively.

R-square is often called the coefficient of determination, is measuring the goodness of fit of the regression equation; this indicates the proportion or percentage of the total variation in the dependent variable explained by the independent variable. The suitability of the model is said to be better if the R square approaches 1. The return R-square is 0.854518, which is nearly close to 1. It means that the independent variable reflects the dependent variable in the returned model. The author has given the IVOL return model previously where each firm return is perceived by the sum of the market return and industry return.

Furthermore, earnings' R-square is 0.9914461, which is even better than the IVOL return model; the value shows that the second model is slightly more fitted to the regression line. It can be concluded that both of the models explain all the variability of the response data around its mean, and the model nearly perfectly fits the data. On the other hand, according to Durnev et al. (2004), high R-Square means high firm specific information, where there is a higher association between current return and future earnings, thus higher cost of equity capital. But this is too early to assume before the author does the final regression between these variables. The independent variable, which is the firm-specific information quality (INFO), is calculated from the ratio of IVOL return (IVOLret) and IVOL earnings (IVOLEarnings). The (INFO) maximum number is 7.4029, while the minimum number is 0.00000002. There is a huge

variation across firms in information quality where we can see it from a high standard deviation of about 1.44. The mean for the whole sample is 0.9204454 which is quite high. The high mean in (INFO) proves that most of the firms in Indonesia control the earnings idiosyncratic volatility. The better the firm's information quality, the higher its firm-specific return volatility.

To conclude as has been explained before, firms in Indonesia manipulate/control their earnings by doing earning management. The better information quality (INFO), the higher a firm's earning (IVOLearnings) and the firm-specific return will be higher consequently. The descriptive statistics could be seen in Table 1.

Conclusion, Implication, and Suggestion

This research studies the relationship between firm information quality and the cost of equity capital in Indonesia for the years from 2003-2015. This research follows the past work of Berger et al. (2018), which developed a new way of measuring the corporate firm-specific information by using the ratio of firm-specific returns and firm-specific earnings. Firm-specific information here turns out to be the firm's information quality where investors will put more weight on the firm reported earnings and not the industry earnings. The essence of this information quality measure is to realise how Indonesian firms control their idiosyncratic volatility of earnings or firm-specific earnings. The better a firm's information quality, the higher a firm-specific return will be.

This research is different from other previous research works done by Barry & Brown (1985); Dakhlaoui et al. (2017); Easley & O'Hara (2004); Lambert et al. (2007); Leuz & Verrecchia (2000) that only studied the proxies of information quality, such as earnings quality, financial reporting quality, information disclosure, information asymmetry and other proxies to the cost of equity capital. Empirical findings in this paper simply capture these other measures that have not been done before. CAPM beta is included because it has an extra factor in explaining the relationship between firm-specific information quality and cost of equity capital. It captures a forward-looking β . Finally, the firm age is included in the regression model because it is important to realise as the firm grows older, the uncertainty reduces.

Firms used as a sample in this research are all listed companies in Indonesia. In total, there are 28,314 observations from 301 companies across 13 years observation period. This research assumes that investors' perceived permanent earnings determine stock prices. Investors perceive the firm's permanent earnings as a geometrically weighted average of reported earnings and industry average earnings. That is why when investors are pricing stocks, they use a weighted average of a firm's reported earnings and industry earnings. If the investor trusts the firm, which means that the firm has a high information quality, they will put more weight on a firm's reported earnings and vice versa. The ratio of idiosyncratic volatility of returns to the idiosyncratic volatility of earnings can be used to measure the overall information quality.



This study concludes that there is a non-significant effect of firm information quality on the cost of equity capital in Indonesia. The result implies earning management practices done by Indonesian firms cause investors to have less trust in the information quality disclosed in the financial reports. The price or return of stocks does not convey all the information in the Indonesian market. The author suggests earning management, good corporate governance practice and investors' behaviour could be good further research variables.

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