

Earning Management, Income Volatility, and Cost of Debt

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ABSTRACT

This study aimed to examine the factors that influence the cost of debt variable. The independent variables in this study were discretionary accrual and income volatility. The sample that the writer used in this study were public companies listed on the Indonesia Stock Exchange 2014-2018. Banking and companies that subject to final tax were excluded, including mining, mining, infrastructure, real estate, and construction companies. The data used were obtained from Bloomberg, Indonesia Capital Market Directory (ICMD), financial statements, and reading sources obtained by experts as a theoretical foundation. The analysis technique used in this study was weighted least square and used Gretl. Based on the tests that have been done in this study, we find that discretionary accruals had no effect on the cost of debt. Suggestions for future creditors in Indonesia should also consider the risk of tax avoidance and earning management as a basis for making decisions when they want to provide loans.

Keywords: *Cost of debt, Discretionary accrual, Income volatility*

1. INTRODUCTION

Business development is a common thing for large and small companies to do to cope with increasingly fierce competition. In developing its business, companies need funding sources, both from internal and external parties. Funding from internal parties is generally in the form of retained earnings or retained earnings. If internal funding is not sufficient for the company's needs, external funding can be done by seeking bank loans or corporate bonds, and the latter can issue shares. There are several types of bonds; in Indonesia, the government issued bonds, namely *Obligasi Negara Ritel* (ORI) and private bonds or corporate bonds, which are usually better known as corporate bonds. ORI is called a risk-free bond because it is 100% guaranteed by the state, has a fixed interest rate, and although ORI has a term of 3 years, it can be sold before maturity. Meanwhile, private bonds tend to have a higher risk but are listed on the Indonesia Stock Exchange and Market Axxess. The pecking order theory states that companies tend to prefer to fund internally because they have a lower risk [1].

In general, large companies have a higher cost of debt [2]. Companies that present financial information with lower quality also tend to have a higher cost of debt than companies with better quality financial information [3]. Although debt also has risks, the cost of issuing bonds is considered cheaper, and the risk is smaller than the

issuance of new shares [4]. Loans made by the company will incur interest costs in the future. In addition to the quality of financial information, creditors will look at the company's track record and assess the company's accuracy in paying its dependents. In business, there are various ways that companies do to run their business. One of them is by controlling the accrual recognition of profit or expense so that the company can achieve the desired income, and it is known as discretionary accrual. Empirical evidence suggests that lower earnings quality implies there is greater information asymmetry between investors and management [5]. Companies can be considered as tax avoidance when, in fact, earnings control by management is still related to earnings management [6]. The loan tenor can be influenced by the level of transparency of the company [7].

Another factor that must be considered is income volatility, which is the change in the fluctuation of a company's profit before tax. Income volatility is used to control the risk of the firm's operation [8]. Earnings management activities must always be monitored and controlled so that they are not excessive and have a negative impact. There are several ways to control income volatility, one of which is income smoothing. Companies with a higher level of income smoothing show a lower cost of debt [9].

Many studies have been conducted on the relationship between earnings management and the cost of debt, with either positive or negative results. References [10] in their research examining public companies in Brazil found that earnings management is positively related to the cost of debt. In addition, [11], through their research, found that discretionary accruals are positively related to debt costs. Then [12] found that companies that present worse financial information are associated with higher debt costs. But [13] found that companies with better quality financial information show lower debt costs.

References [14] confirm that changes in earnings before tax are positively related to company risks, such as stock-return volatility and market beta. Then, [15] explained that equity volatility, callable bonds, long-term bonds, bonds with higher coupons, and bonds with worse ratings were associated with a higher cost of debt. If interest rates fall, bond prices would rise. Market to book ratio is positively related to cost of debt.

This paper's purpose is to examine discretionary accrual, and income volatility is affecting the cost of debt that is done by Indonesia firms except for firms that are included in the financial, mining, infrastructure, real estate, and construction, infrastructure, utility, and transportation sector and also holding companies during 2014 – 2018 period.

2. LITERATURE REVIEW

2.1 Pecking Order Theory

Pecking order theory was introduced by Donaldson in 1961 and refined by Stewart C. Myers in 1984. This theory discusses company funding and its sources. Long-term corporate funding can come from internal and external sources. This theory states that companies prefer to fund internally because they have a lower risk [1]. If the retained earnings are not sufficient, the second option that can be selected is to seek funding through debt, and the last option is to seek additional capital by issuing new shares [16]. Managers have concerns that if the issuance of new shares by the company would be interpreted as bad news by investors and cause the stock price to fall, this is due to the asymmetry of information between management and investors [13] so that every manager's behavior is often used as a signal about company's conditions and prospects.

2.2 Credit Analysis Theory (5C)

Credit analysis theory explains what aspects a creditor should consider when he wants to provide funding to prospective borrowers. This is known as the 5C principle because there are five aspects that must be considered. These aspects include characteristics, capacity, capital, condition, and collateral [17] and [18]. This can be seen from the factors of the age of the individual or company,

the type of business, the number of dependents of a family member or employee, criminal records, legal decisions, history of late payments at the bank, and collateral held for current loans, etc. From the background of this prospective debtor, creditors can measure the level of "willingness" of customers to pay off their debts.

2.3 Cost of Debt

Cost of debt (COD) can be defined as "the rate of return desired by creditors when providing funding to the company" [19]. In terms of funding, issuing shares is the last option because it is considered non-conventional [4]. Generally, the funds that are obtained from loans will generate interest expenses after taxes and other costs. The level of cost of debt itself can be influenced by several factors [20]. In determining the interest rate and maturity period (tenor) of a loan, creditors usually assess the risk from financial information.

2.4 Discretionary Accrual

Each company has its own way of being able to defend itself, one of which is by doing discretionary accruals. Discretionary accrual (DACC) is a recognition of accruals of profit or expense that can be controlled by management so that the company can achieve the desired revenue. Recognition of accruals of profit and expense that is controlled and monitored by management is a risky activity for creditors because the company can be considered as tax avoidance, even though, in fact, the control of earnings carried out by management is still related to earnings management [6]. Empirical evidence suggests that lower earnings quality implies greater information asymmetry between investors and management [5]. Therefore, earnings management control has an important role in assessing credit ratings and determining the company's cost of debt [3].

References [11] through his research found that discretionary accruals are positively related to the cost of debt. Then the negative short term debt coefficient supports the idea that lenders are considered to be able to participate in monitoring and limiting discretionary accruals cracking. In addition, companies that experience higher refinancing pressure are considered more able to manage their revenue. The results of his research also show that company managers who experience less refinancing pressure tend to pay less attention to earnings management because their credit risk is considered lower. Based on the explanation above, the hypothesis in this study, namely:

H₁: Discretionary Accrual has a negative effect on Cost of Debt

2.5 Income volatility

Income volatility (VOL) is the change in the increase and decrease of a company's pre-tax profit. Income volatility is used to control the risk of the firm's operation [8]. However, in carrying out earnings management, of course, this activity must always be monitored and controlled so that it is not excessive and brings negative impacts. There are several ways to control changes in profit before tax, one of which is income smoothing. If income smoothing does not run smoothly (fails), the company may be charged with higher loan interest rates [15].

The results of research by [15] show that changes in profit before tax are positively related to the cost of debt. In his research, equity volatility, callable bonds, long-term bonds, bonds with a higher coupon, and bonds with a worse rating were associated with a higher cost of debt. The market to book ratio is positively related to the cost of debt. This is consistent with the assumption that as a company with more growth options is riskier, creditors demand higher returns (interest) from the company. Based on the explanation above, the hypothesis in this study, namely:

H₂: Income volatility has a positive effect on Cost of Debt

2.6 Control Variables

The control variable is the variable that controls the effect of the independent variable on the dependent variable so that it is not influenced by external factors that are not examined. The control variable in this study is leverage, which can be defined as the company's ability to manage funds or assets that have fixed expenses to increase company profits [21]. The higher the company's debt, the financial burden will increase. Firm size is one of the variables used because larger corporate debtors tend to have lower COD [1] because they are considered to have a better reputation and have more assets, making it easier to get debt loans because they can be used as collateral. The property, Plant, Equipment (PPE) are tangible fixed assets owned by the company. Fixed asset ownership affects the creditors' decision to finance a company. Usually lenders are looking for cashable collateral when providing loans. This is done to anticipate if the company cannot pay its debts at a later date [20]. High cash holdings are also important because they can be relied on in a crisis to pay off company debts [20].

3. METHOD

3.1 Research Model

Based on the explanation above, we mapped our research model as presented in figure 1.

3.2 Sample Selection

Our sample is public listed firms in Indonesia except for firms that are included in the financial sector because its governance has specific rules and a specific business environment so that it cannot be compared with other sectors and holding companies sector because Strategic decision making is carried out at the corporate level because business management is not carried out directly [22]. Also, firms that use the final tax rate, which was categorized as mining, infrastructure, real estate, and construction, infrastructure, utility, and transportation sector during the 2014 – 2018 period. The sample was reduced to 62, including firms that consistently publish their annual financial statements during the observation periods. This final research sample comprises 310 firm-year observations used for empirical analysis.

3.3 Regression Model

This study examines the association between discretionary accrual and income volatility with the cost of debt using the regression equation. The following is the empirical model used to test our hypothesis:

$$CoD_{(t+1)} = \beta + \beta DACC + \beta PI_{Vol} + \beta Lev + \beta Size + \beta PPE + \beta Cash + \epsilon \tag{1}$$

3.4 Variable Measurement

The dependent variable in this study is the cost of debt (COD). The formula for calculating the cost of debt, according to [23], is:

$$CoD_{(t)} = \frac{Interest\ Expense_{(t)}}{Average\ Long\ Term\ Debt_{(t)}} \tag{2}$$

This study uses two independent variables, namely discretionary accruals and income volatility. Here is a

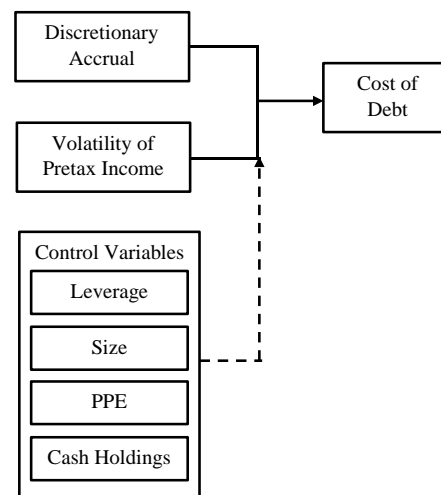


Figure 1. Research Model

formula for calculating discretionary accruals according to [24]:

$$DACC_{it} = \beta_0 + \beta_1(1/ASSETS_{it} - 1) + \beta_2\Delta SALES_{it} + \beta_3PPE_{it} + \beta_4ROA_{it} + \varepsilon \quad (3)$$

To calculate the income volatility referring to [10], the used formula is:

$$Vol_{(a)} = St. Dev \times \frac{Pretax\ Income}{Total\ Asset_{t-1}} \quad (4)$$

$$Vol = \frac{PI_{vol(a)t-3} + PI_{vol(a)t-2} + PI_{vol(a)t-1}}{3\ tahun} \quad (5)$$

The control variables used in this study are as follows.

Leverage

$$LEV = \frac{LTD+Debt\ in\ Current\ Liabilities}{Market\ Capitalization} \quad (6)$$

Size

$$Size = Ln(Total\ Assets) \quad (7)$$

PPE

$$PPE = \frac{Net\ PPE}{Total\ Asset} \quad (8)$$

Cash

$$Cash = \frac{Cash}{Total\ Asset} \quad (9)$$

4. RESULT AND DISCUSSION

This research examines empirical predictions by using regression analysis. The variables used show the results of the collinearity test with the smallest number, namely 1.071, which is owned by the SIZE, and the largest number is owned by PPE of 1.313, so there is no collinearity problem.

Table I presents descriptive statistics of a sample of 310 observations covering 62 companies tested using the Gretl software. The minimum value of the DACC is owned by PT Impack Pratama Industri in 2016, and the maximum value was owned by Selamat Sempurna in 2018. COD has a maximum value of 17.6, which is owned by PT. Nusantara Inti Corpora Tbk in 2018, while the minimum value of COD is owned by PT. Mulia Industrindo Tbk in 2018. During the study period from 2014 to 2018, PT Kertas Basuki Rachmat Indonesia Tbk had the smallest CASH in 2016, where PT Jakarta Setiabudi Internasional Tbk had the highest CASH in 2014. Regarding VOL, PT. Fajar Surya Wisesa Tbk had the highest VOL in 2018, while PT Astra International Tbk had the smallest VOL in 2014. For LEV, the minimum value is owned by PT Inti Agri Resources Tbk.

in 2018, while the maximum value was owned by PT Indopoly Swakarsa Industry Tbk in 2015. SIZE has the highest score, which is 33.5, which is owned by and PT. Astra International Tbk. in 2018, whereas the minimum value is owned by PT. Global Teleshop in 2015. For PPE, the minimum value is owned by PT. Kedaung Indah Can Tbk in 2014, while the maximum value is owned by PT. Kertas Basuki Rachmat Indonesia Tbk in 2018. The average (mean) COD value is 0.06012 or 6%. This shows that, in general, the COD value in this data sample is low because, based on data on the basic loan interest rate issued by the Financial Services Authority of Indonesia, the corresponding average interest rate in Indonesia in 2014-2018 ranges from 9% - 10%. In addition, it can also be seen that the DACC average value is 0.0583. This shows that, in general the companies that are the data samples in the study carry out earnings management by increasing profits because the DACC value > 0 (revenue maximization). The best DACC value is DACC, which measures the number 0 (zero) because this indicates that the company does not have a big effort to increase the value of profits. In this study, Vol has an average value of 0.0236 and a standard deviation of 0.0172. The standard deviation value for Vol is below 3, and this is a good thing because the smaller the standard deviation value, the more reliable the data is, and the higher the standard deviation value indicates that the data range is too wide so that the data is less reliable. This shows that Vol value is still low.

In assessing panel data, it is important to define the model. Data testing using fixed effects shows the p-value is below 5%, the implication is that the model contains heteroscedasticity. Therefore, the fixed effect cannot be used because of the heteroscedasticity problem.

Then the random effect method is used, the test results show the p-value is below 10%, which means that the random effect model is not fit for use in this study so that the WLS model is used in this study.

The results of the weighted least square state that discretionary accrual has a negative effect on the cost of debt meaning that the higher the discretionary accrual, the lower the credit risk according to banks, so that the cost of debt is also lower, therefore H1 is accepted. These results are in agreement with [24]. High-income volatility is disliked by creditors, it causes the level of corporate risk to be higher, and the level of bank confidence decreases, H2 is accepted. This result is in line with [20] and [15]. They found that income volatility increases the cost of debt borne by the company.

Table 1. Descriptive statistics

Variable	N	Min	Max	Mean	Std. Dev.
COD	310	4,081e-005	0,2131	0,06012	0,04317
DACC	310	9,59e-006	0,258	0,0583	0,0495
VOL	310	0,000540	0,0757	0,0236	0,0172
LEV	310	8,84e-005	3,13	0,631	0,658
SIZE	310	24,9	33,5	29,0	1,72
PPE	310	0,0823	0,966	0,449	0,192
CASH	310	0,000416	0,308	0,0713	0,0655

The effect of leverage on the cost of debt shows a significant negative relationship, meaning that firms with high leverage receive the lower cost of debt. The same result is also shown by the size and PPE variables, which have a significant negative relationship. These results indicate that the larger the size of the company, the smaller the cost of debt of the company. And also, the more PPE a company owns, the less COD company get.

Discretionary accrual is one way of evaluating whether the company is practicing earnings management or not. Discretionary accruals are used to manipulate company profits in the financial statements presented. However, the results of this study indicate a significant negative relationship between DACC and COD. This means that the higher the company's DACC value, the smaller the COD given by the creditor. This was alleged because Indonesian banks did not question the company's earnings management activities because in providing credit, the bank would refer to the financial statements issued by the company.

By performing earnings management, it can be assumed that the company's revenue increases in value. Therefore, with the increase in revenue reported by the company, the COD will be smaller. The high-income volatility especially for the last three years is not considered a good thing for companies applying for debt financing. Banking does not tolerate companies with high income volatility. In fact, banks provide a larger COD. Banking considers companies with high-income volatility to be at risk of default. Volatility can be caused by

the nature of the company, such as the agriculture sector is considered more volatile because it depends on economic and market conditions at that time. When commodities rise, the price of goods also rise because they are affected by the condition of the dollar currency at that time.

Therefore, banks also choose companies from certain sectors in providing funding. Research in Indonesia for the period 2003-2011 found that bank loans were concentrated in the consumer and trade sector [25]. In addition, banks also consider the company's financial performance. Companies with stable financial performance are considered profitable for the bank.

Control variables including leverage, size, PPE, and cash holding, showed significant results on the cost of debt. High leverage means higher confidence and lower risk. High debt ratio results in lower COD. Indonesian banking views debt earned by companies as a concrete form of creditor trust in the company. Companies that have higher debt are considered to be trustworthy debtors, so they get lower COD.

Banks prefer to provide credit to companies that have a good debt track record in the previous period. The negative relationship that arises between size and COD shows that companies with a large company size scale get a smaller COD. Companies with a large size value have a large asset value too. Investors are more concerned with larger companies, and therefore may have a stronger reputation as debtors. In addition, the loan guarantee owned by the company is bigger because it has more assets. This causes creditors to charge a smaller COD.

Table 2. Panel regression result with cod as independent variable

Variables	Fixed Effect	
	Coefficient	p-value
DACC_ABS	-0,0170145	0,7398
VOL	-0,182853	0,2063
LEVERAGE	-0,00943601	0,0320**
SIZE	-0,0203110	0,0142**
PPE	-0,0328855	0,1545
CASHHOLDINGS	-0,00247823	0,9592
Adjusted R squared	0,146044	
p-value (F)	9,28e-39	
Heteroscedasticity	0	

** significance at the 0.05 level

Table 3. Panel regression result with cod as independent variable

Variables	Random Effect	
	Coefficient	p-value
DACC_ABS	- 0,00810629	0,8609
VOL	- 0,129257	0,3286
LEVERAGE	- 0,00918426	0,0189**
SIZE	- 0,00870245	0,0006***
PPE	- 0,0250477	0,1566
CASHHOLDINGS	0,00125596	0,9763
Adjusted R squared	0,146044	
p-value (F)	0,125328	

** significance at the 0.05 level
*** significance at the 0.01 level

Table 4. Panel regression result with cod as independent variable

Variables	Weighted Least Square	
	Coefficient	p-value
DACC_ABS	- 0,0415327	0,0810*
VOL	0,145923	0,0220**
LEVERAGE	- 0,00825376	0,0016***
SIZE	- 0,00826543	<0,0001***
PPE	- 0,0240784	0,0074***
CASHHOLDINGS	0,0453158	0,0750*
Adjusted R squared	0,370177	
p-value (F)	4,12e-28	

* significance at the 0.1 level
** significance at the 0.05 level
*** significance at the 0.01 level

Loan guarantees in the form of marketable assets are often required by creditors. So that companies that have more tangible assets get lower COD because they are considered to have a low risk of default. According to the test results, the negative relationship between PPE and COD indicates that the greater the PPE value, the smaller the COD the company has. Large cash holding in high-tech firms can reduce the risk of default so that banks reduce COD given to companies. High-tech firms that have large cash holdings benefit greatly from credit risk assessment.

5. CONCLUSION

This research studies the effect of discretionary accrual and income volatility on the cost of debt using a sample of all companies listed on the Indonesia Stock Exchange (IDX) except for the finance, holding companies, mining, property, real estate, and construction sectors with an observation period 2014-2018. Based on the tests that have been done in this study, we find that

discretionary accruals had no effect on the cost of debt. This could be because most of the company's capital came from private debt, not from public debt. In addition, private lenders have more rights to supervise the borrowing firm so that the risk of information related to managerial reporting policies is reduced so that the bonds market in Indonesia does not pay too much attention to the accrual information side.

Then income volatility does not show the significance of the cost of debt. This occurs because the level of change in earnings before tax is still low and shows that, in general, the companies that are the data samples in the study do not have a big effort to implement earnings management.

Suggestions for future researchers, it is better if further research is carried out at all companies in Indonesia in order to get more accurate results. In addition, creditors in Indonesia should also consider the risk of tax avoidance and earning management as a basis for making decisions when they want to provide loans.

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