

# THE EFFECT OF COMPANY CHARACTERISTICS TO COST OF DEBT

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**Abstract**— The objective of this research is to examine the effect of firm's characteristics (age, firm size, market to book ratio, and leverage) as the independent variable to cost of debt of the firm as the dependent variable of firms that listed in Indonesia Stock Exchange for the 2011-2015 periods. This research uses multiple linear regressions in a panel data for all of the research's observation that used in this research. The number of observation in this research are 1485 observations, consist of 297 firms that listed in Indonesia Stock Exchange for the 2011-2015 period. The result shows that age and market to book ratio have a positive significant effect on the cost of debt. On the other hand, firm size and leverage have no significant effect on the cost of debt.)

**Keywords**— *Cost of debt, age of firm, market to book, size, leverage*

## I. INTRODUCTION

All business entities require funds in running their business. Funding is one of the activities under financial management. The funding activity itself is divided into two, namely internal and external funding. Internal funding is obtained from retained earnings of business entities, while external funding is obtained from debt and equity. Liability represents a debt of a business entity to the other party such as suppliers or creditors that must be repaid by the entity (Murhadi, 2013). When a business entity obtains funding from debt, there is a cost charged for the debt. The cost of debt is the cost to be paid by a business entity when it borrows funds for its project financing (Murhadi, 2013). In running a business, every business requires funding for its activities. Company funding can be obtained from internal funding as well as external funding. For external funding, a business entity may obtain it from equity or debt. It is important for the company to determine the company's capital structure properly to determine the optimal point of debt cost and the most profitable equity cost so that the company can reach economies of scale. Companies need to know the cost of debt to determine the minimum amount of return that must be obtained by the company in order for the company to be capable of paying its debt costs. Murhadi (2011) stated that

the decision of the capital structure regarding financing by financial managers is to determine the amount of the loan by considering the cost and benefits of the debt. Sheikh and Wang (2011) also stated that if the funding decision increases the cost for the business entity, then such costs may result in the bankruptcy of the entity.

In order to deeply understand the relationship between company characteristics and the cost of debt, many studies on the relationship have been conducted. Shailer and Wang (2015) in their study on "Government Ownership and the Cost of Debt for Chinese Listed Corporations" explained the relationship between the type of ownership and the cost of debt of the enterprise. The dependent variable used is the interest rate indicating the cost of debt. While the independent variables used are government control, financial distress, excess shareholder control, ownership concentration, CEO duality, board independence, agency cost, return on assets, age, firm size, tangible asset intensity, cash flow, sales growth, market to book ratio, short-term debt ratio, leverage, and inverse asset turnover. The results of this study showed that government ownership has a negative significant effect on the cost of debt. Ownership concentration, CEO duality, board independence, tangible asset intensity, and cash flow have no significant negative effect on debt cost; while return on assets and sales growth have no significant positive effect on debt cost. In addition, financial distress, excess shareholder control, agency cost, age, short-term debt ratio, and inverse asset turnover have a significant positive effect on the cost of debt, but firm size, market to book value, and leverage have a significant negative effect on the cost of debt.

In addition, other studies have also been conducted related to the debt costs of business entities. Borisova, Fotak, Holland, and Megginson (2015) in their research on "Government Ownership and the Cost of Debt: Evidence from Government Investments in Publicly Traded Firms" stated that government ownership of a business entity listed on the Stock Exchange influences the cost of debt. The dependent variable used is a credit that describes the cost of debt. While the independent variables used are government control,

institutional ownership, institutional block holder, rating, maturity, callable, secured, leverage, market to book ratio, return on equity, size, GDP growth, level of the term structure, and slope of the term structure. This research was divided into two parts, i.e. at the time before the financial crisis (1991-2007) and after the financial crisis (2008-2010). From this research, it was found that leverage has a significant positive effect on the cost of debt in pre-financial crisis conditions, which is contrary to Shailer and Wang (2015) study that stated otherwise, but leverage has a significant negative effect on the cost of debt in the financial crisis conditions, which supports Shailer and Wang (2015) research. In the meantime, firm size has a significant negative effect on the debt cost of a business entity in pre-financial crisis conditions and financial crisis conditions that support the results of Shailer and Wang's (2015) research. While market to book value has an insignificant negative effect on the cost of debt, in the time of pre-financial crisis and a significant positive effect in the time of financial crisis.

Causholli and Knechel (2012) explained the relationship between the quality of the audit and the cost of debt. The dependent variable used is the interest rate that describes the cost of debt. While the independent variables used are long-term debt, change in debt, prime rate, interest premium, leverage, profitability, firm size, collateral, negative equity, and year. From this study, the results found that age has a significant negative effect on the cost of debt as opposed to the results of Shailer and Wang (2015) research. Meanwhile, leverage also has a positive significant effect on the cost of debt that is also contrary to the results of Shailer and Wang (2015) research.

Hashim and Amrah (2016) in their study on "Corporate Governance Mechanisms and Cost of Debt: Evidence of Family and Non-family Firms in Oman" reiterated the relationship between the effectiveness of the board of directors, the effectiveness of audit committees, and the cost of debt in family and non-family firms in the Sultanate of Oman. Dependent variable used is the cost of debt. While the independent variables used are board of director's effectiveness, audit committee effectiveness, family control, firm size, leverage, firm performance, auditor reputation, and interest coverage rate. From the study, it was found that firm size has an insignificant positive effect on debt costs as opposed to Shailer and Wang (2015) research results. Meanwhile leverage has an insignificant negative effect on the cost of debt.

From the four aforementioned variables, there are four chosen variables namely age, firm size, market to book ratio, and leverage because at least two journals found different research results. Thus, there are four variables that will be used in this study as independent variables. Shailer and Wang (2015) showed there is a significant positive relationship between age and debt costs. This is because older business entities may be exposed to higher debt costs if the business entity suffers from inertia and is less adaptable. While Causholli and Knechel (2012) study showed conflicting results as age has a significant negative effect on the cost of

debt because the older business entities have a better credit history, thus tending to achieve economies of scale from the cost of debt. Both Shailer and Wang (2015) and Borisova, Fotak, Holland, and Megginson (2015) studies found that firm size has a significant negative effect on the cost of debt in the time of financial crisis or when there is no financial crisis because the firm size describes the total assets of a business entity in which a larger business entity has a smaller default risk and is expected to have economies of scale of debt costs. However, both Causholli and Knechel (2012) and Hashim and Amrah (2016) studies showed no positive relationship between firm size and debt costs because larger business entities also tend to experience more bureaucracy and organizational hierarchy, thus perceived to be riskier by lenders. The Shailer and Wang (2015) study demonstrated that there is a significant negative relationship between the market to book ratio and the cost of debt because market to book ratio can be seen as a proxy for the growth prospects of a business entity, resulting in high growth opportunities associated with higher possibility of debt repayment, leading to lower default risk and lower debt costs. Borisova, Fotak, Holland, and Megginson (2015) research in the absence of financial crisis also showed negative results, but not significant. However, this is contradictory in the time of financial crisis that shows a positive relationship between market to book ratio and the cost of debt, because, during the financial crisis, interest rates always increase, so the debt cost of business entities will also increase despite an increase in the market to book ratio. The leverage variables in Borisova, Fotak, Holland, and Megginson (2015) study showed a significant positive result in the absence of a financial crisis, the results are supported by Causholli and Knechel (2012) research, as business entities with high debt levels have higher risks, leading to lenders providing higher debt costs. But researches by Shailer and Wang (2015) and Borisova, Fotak, Holland, and Megginson (2015) during the financial crisis showed significant negative results, due to an increase in leverage followed by an increase in the amount of collateral, thus reducing the risk of default and lowering the cost of corporate debt business.

Addressing the differences in research results from four aforementioned studies, this research will focus on the effect of company characteristics on the debt cost of a business entity. Thus, more in-depth research will be conducted on the characteristics of enterprise age, firm size, market to book ratio, and leverage to the cost of corporate debt.

## II. RESEARCH METHODS

This study used a sample of a business entity listed on the Indonesia Stock Exchange over the period of 2011-2015. The variables used in this study were one dependent variable and four independent variables. The dependent variable in this research was the cost of debt. While the independent variables in this study were age, firm size, market to book ratio, and leverage. The cost of debt was obtained by dividing the financial burden of a company by the average short-term and long-term liabilities (Shailer and Wang, 2015). Age is the age of a business entity from the IPO until the time of the research is conducted. According to Bradley, Pantzalis, and Yuan

(2016), the company's age was measured from the year of the company's establishment until the year of the research conducted. Firm size was measured by the logarithm of total assets. (Shailer and Wang, 2015). Market to book ratio was calculated by dividing the market value of equity by book value of equity (Shailer and Wang, 2015). Leverage was obtained by dividing total debt by total assets (Hashim and Amrah, 2016). This study used panel data by searching for the most suitable model among pooled least square (PLS / common effect (CE)), fixed effect (FE), or random effect (RE).

### III. RESULTS AND DISCUSSION

The sample of research used was 297 companies over the period of 2011-2015. The classical assumption test has been done and the Chow & Hausman Test were also conducted to determine the best model used. The Chow test results were obtained by probability values for cross-section F significant at  $\alpha = 5\%$  so that the fixed effect model is better than the common effect / PLS model. The Hausman test was obtained by random cross-section probability value significant at  $\alpha = 5\%$  so it can be concluded that a fixed effect model is better than a random effect model.

TABLE 1: REGRESSION TEST RESULTS

Independent Variables	Coefficient	Probabilities	Hypothesis
AGE	0.00125	0.0010*	-
FS	2.22E-05	0.9875	-
MBRATIO	0.000952	0.0043*	-
LEVERAGE	0.007717	0.2025	+

\* Significant at the 1% level

The age variable has a coefficient of 0.00125 and a significance level of 0.0010, indicating the age variable has a significant positive effect on the cost of debt variable. These results are supported by Shailer and Wang (2015) and Anderson, Mansi, and Reeb (2003) studies. However, contrary to research conducted by Causholli and Knechel (2012); Pittman and Fortin (2004) and Lai (2011) found a significant negative relationship between the variables of age and the cost of debt. Then, the hypothesis in this study states a significant negative relationship between the variable ages and cost of debt. Age has a positive effect on the cost of debt meaning the greater the age of a business entity, the higher the cost of corporate debt. Shailer and Wang (2015) suggested significant positive results because older business entities tend to be exposed to higher debt costs because older business entities tend to suffer from inertia and are less adaptable. The business entity that suffers from inertia is a business entity that is already comfortable in its current state and does not want to make changes, although such changes can provide better returns, so that when the economic, social and political circumstances change, the entity does not want to keep up with the changes and remain in its current state of affairs, causing it to risk becoming a place of investment by creditors.

The firm size variable has a coefficient of 0.0000222 and a significance level of 0.9875 indicating that the firm size variable has an insignificant positive effect on the cost of debt variable. These results are supported by Bradley and Chen (2010) and Hashim and Amrah (2016) researches. However, this result is contrary to researches by Shailer and Wang (2015), Causholli and Knechel (2012), Pittman and Fortin (2004), and Borisova, Fotak, Holland, and Megginson (2015). Firm size has a positive effect on the cost of debt meaning the bigger size of the firm, the higher the debt cost of business entity. The size of a large business entity does not necessarily provide a guarantee to the creditor for the loan they have provided. Large business entities can have greater agency problems, while small business entities may have higher growth opportunities. The business entities under the study are in different industries, so the value of the asset does not reflect the real value, as in the main sector where the resource owned by the enterprise is in the earth, the asset recognition is done if it has been excavated and located on the earth. It is, therefore, possible that the creditor does not necessarily see the size of the business entity in some sectors where firm size is proxied by total assets.

Variable market to book ratio has a coefficient of 0.000952 and a significance level of 0.0043. This means that the market to book ratio variable has a significant positive effect on the cost of debt variable. This result is supported by Borisova, Fotak, Holland, and Megginson (2015) research during the financial crisis. However, the research is contrary to Shailer and Wang (2015) study who found a significant negative relationship between market to book ratio and cost of debt. Market to book ratio has a positive effect on the cost of debt meaning the greater the market to book ratio of the business entity, the higher the cost of corporate debt. This significant positive effect is due to the fact that the creditor in lending not only considering the debt level of the entity but also the risks faced. According to Chen and Zhao (2006), market to book ratio is a gauge for growth opportunities, so high market to book ratio shows high growth expectations and low market to book ratio shows low growth expectation. According to Berger and Udell (1998), business entities with high growth, have a high risk and tend to have a lot of intangible assets, but on the other hand, business entities with low growth have a low risk and tend to have a lot of tangible assets. Thus, it can be concluded that business entities with a high market to book ratio have higher risk and an intangible asset that many, and cause the cost of debt of business entity increases.

The Leverage variable has a coefficient equal to 0.007717 and significance level equal to 0.2025. That is, the leverage variable has an insignificant positive effect on the cost of debt variable. These results are supported by Hashim and Amrah (2016), Juniarti and Sentosa (2009), and Anderson, Mansi, and Reeb (2003) studies but contrary to Shailer and Wang (2015), Borisova, Fotak, Holland, and Megginson (2015), and Pittman and Fortin (2004) researches. Leverage positively affects the cost of debt meaning the higher the use of corporate debt, the higher the cost of corporate debt. According to Horne and Wachowicz (2013), analysis and interpretation of various financial ratios will provide a better understanding of the

condition of business entities. Thereby, the financial ratios need to be recognized as a whole because there is no single ratio that can provide sufficient information to make an assessment of the performance of a business entity. Murhadi (2013) used five groups of ratios: liquidity ratio, asset management ratio, debt management ratio, profitability ratio, and market value ratio. This shows that the state of a business is not affected by the debt management ratio only. Therefore, leverage cannot reflect the overall state of the business entity meaning other ratios are needed to understand the risk and performance of the business entity which is the determinant factor of debt cost. In addition, the reason for a business entity with large leverage does not have a significant effect on the cost of debt of a business entity is because the creditor as a lender, such as a bank, has a consideration to minimize the risks faced on the loan. According to Megginson (2010), 5C consists of 1. Character: related to nature, as well as the habits of the debtor. The creditor can first see the research and collect information related to the debtor's profile before giving the loan. This information can be obtained from the business environment of the debtor. The purpose of this assessment is to understand the extent to which the good faith of the debtor in fulfilling its obligations in accordance with the promised statement. 2. Capacity: related to the ability of the debtor to pay its obligations. Debtor capacity can be seen from the prospect of growth and profitability expectations of the debtor. The purpose of this assessment is to assess the extent to which the business results obtained by a business entity will be able to pay the obligations in accordance with the established agreement. 3. Capital: related to the condition of wealth and capital invested by the debtor in its business activities. 4. Collateral: related to a guarantee that has a certain value and can be seized by the creditor if the debtor cannot fulfill its obligations. 5. A condition of Economy: related to economic conditions affecting business. Most business prospects are heavily influenced by economic conditions such as public purchasing power, market competition conditions, capital market movements, and so forth. Therefore, it is necessary to assess the condition of the business sector to be financed to minimize the possibility of credit becoming problematic in the future. Of the factors considered by the bank as the creditor, leverage is not included in the factors under consideration. Business entities that have large debt levels, not necessarily have the five criteria, such as good character. Conversely, a business entity that has a small debt level does not necessarily have the five criteria. Thus, the leverage variable has no significant effect on the cost of debt.

#### IV. CONCLUSION

From the results of data processing that has been done in the previous chapter, it was obtained that the independent variables of age, firm size, market to book ratio, and leverage significantly affect the cost of debt of business entities listed on the Indonesia Stock Exchange over the period of 2011 – 2015. Based on the results of hypothesis testing by doing a t-test, it was found that the variables of age and market to book ratio have a significant positive effect on the cost of debt. While the variables of firm size and leverage have an insignificant effect. The result of the research for the age variable has a significant positive influence on the cost of debt

variable. This means the greater the age of a business entity, the higher the cost of debt of the business entity. These results are supported by Shailer and Wang (2015) and Anderson, Mansi, and Reeb (2003) researches. However, the results of this study are contrary to the researches of Causholli and Knechel (2012), Pittman and Fortin (2004) and Lai (2011). The results of the researches for firm size variable have no significant positive effect on the cost of debt variable. This means firm size does not have an effect on the cost of debt of a business entity. These results are supported by Bradley and Chen (2010) and Hashim and Amrah (2016) researches but contrary to Shailer and Wang (2015), Causholli and Knechel (2012), Pittman and Fortin (2004), and Borisova, Fotak, Holland, and Megginson (2015) researches. The results of the research for a market to book ratio have a significant positive effect on the cost of debt variable. This means that the greater the market to book ratio of a business entity, the higher the cost of debt of business entity. These results are supported by Borisova, Fotak, Holland, and Megginson (2015) research conducted in the event of a financial crisis but contrary to Shailer and Wang (2015) research. The results of the research for leverage variable have no significant positive effect on the cost of debt variable. This means that the leverage of the business entity has no effect on the cost of debt of the business entity. These results are supported by Hashim and Amrah (2016), Juniarti and Sentosa (2009), and Anderson, Mansi, and Reeb (2003) studies but contrary to the researches of Shailer and Wang (2015), Borisova, Fotak, Holland, and Megginson (2015), and Pittman and Fortin (2004).

This research can be used as a reference and recommendation for investors when considering factors related to the cost of debt of business entity such as age, firm size, market to book ratio, and leverage. Investors who tend to have risk-averse risk preference may choose to invest in a business entity with a low cost of debt. For all business entities listed on the IDX, business entities need to examine the comparison between cost and benefits incurred before deciding to use debt as an external funding source. The proportion of its use should be adjusted to the ability to pay the business entity so as not to cause a default that will lead to financial distress in the future. This research can be used as a recommendation for further research. This study has a limited number of variables. For further research, it is expected to examine other sectors with more number of variables, adding other corporate factors that have not been studied in this research, such as the influence of tangible and intangible assets of business entity to cost of debt.

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