FACTORS IN CAPITAL STRUCTURE AND ITS INFLUENCE ON TOTAL DEBT RATIO OF AUTOMOTIVE INDUTRY

FILIA NINDIANI
ERIKA JIMENA ARILYN

Trisakti School of Management, Jl. Kyai Tapa No. 20 Jakarta 11440, Indonesia
nindianif@gmail.com

Abstract: *The purpose of this study is to get the empirical results about determinant factors in capital structure and its influence on total debt ratio. Liquidity, growth opportunities, firm size, profitability, and firm age is used as the independent variables. Data of 8 automotive companies listed on IDX were collected for the period of 1998-2016 (19 years). The data is collected from secondary data by analyzing the financial statement of sample companies. Panel data analysis has been used to find out the regression based on data collection. Findings of this research showed that liquidity, profitability, and firm age have an influence partially on total debt ratio. While growth opportunities and firm size have no influence partially on total debt ratio.*

Keywords*:* *total debt ratio, capital structure, trade-off theory, pecking order theory*

Abstrak: Tujuan dari penelitian ini adalah untuk mendapatkan hasil empiris mengenai faktor penentu dalam struktur modal dan pengaruhnya terhadap *total debt ratio*. *Liquidity, growth opportunities, firm size, profitability,* dan *firm age* digunakan sebagai variabel independen. Data 8 perusahaan otomotif yang tercatat di BEI dikumpulkan untuk periode 1998-2016 (19 tahun). Data tersebut dikumpulkan dari data sekunder dengan melakukan analisa terhadap laporan keuangan perusahaan sampel. Analisis data panel digunakan untuk mengetahui regresi berdasarkan data yang telah dikumpulkan. Temuan penelitian ini menunjukkan bahwa *liquidity, profitability, and firm age* berpengaruh secara parsial terhadap *total debt ratio.* Sedangkan *growth opportunities* dan *firm size* tidak berpengaruh secara parsial terhadap *total debt ratio.*

Kata kunci: *total debt ratio, capital structure, trade-off theory, pecking order theory*

INTRODUCTION

Finance plays an important role in the management of a company. Company needs funds and it is important to take care of funding management in the most effective and efficient way in order to keep the business running well. When the funds are inadequate, the company will suffer. That is why it is very important for the company to estimate the capital required before running the business. While estimating the capital structure of a company, necessary care has to be taken to identify the optimal capital structure.

Gitman and Zutter (2015, 560) stated that capital structure is the mix of long-term debt and equity maintained by the firm. This means there are two components, debt and equity, that must be managed properly so that the decisions taken can maximize the firm value. A firm should minimize the cost of funds by selecting the optimal capital structure. There are no perfect theory has been developed to

determine the exact optimal capital structure of the firm.

Although several researches have been done, there are many assumptions of the theory that contradict with one another. Those researches mostly uses the data and taken in the developed countries. There are still few researches have been done in the developing countries and the differences in result still exists regarding which factors have significant impact to a firm's capital structure.

Regarding to those three gaps, researcher was considered that this research has to be taken in Indonesia as the developing countries. The aim is to get the empirical results about determinant factors in capital structure and its influence on total debt ratio. Those factors are liquidity, growth opportunities, firm size, profitability, and firm age (Ullah et al., 2017).

This research uses companies in automotive industry listed in Indonesia Stock Exchange for the period 1998-2016 as the object of the research. The reason is because it has contributed to export performance of Indonesia and is included in the export of ten major commodities. Eventually it could attract investors to invest their money in the company.

Based on the explanation above, the title of this research is "**Factors in Capital Structure and Its Influence on Total Debt Ratio of Automotive Industry**". This research hopefully gives many advantages and benefits such as, (1) can give a wide knowledge about capital structure and can be used as reference to conduct next research for academy, (2) can be used as information to corporate managerial and as consideration in deciding the optimal capital structure for the firm's financing decision, (3) can give a wide knowledge to investor about capital structure in investing their money for corporate financing, so that investors could get the maximum return with minimum risk.

The research outline made to give a wider and clearer overall picture on every chapter of this research. Introduction explains about the research background, research objectives, research outline, theoretical framework and hypothesis formulation. Research methodology explains research objects, operational definition of variables and its measurements, and data analysis method. Results elaborate the empirical results and analysis. Conclusion elaborates the conclusion and limitation of this research, and also recommendation for further researches.

The Trade-off Theory

Brigham et al. (2014, 577) stated that "Trade-off theory says that the value of a levered firm is equal to the value of an unlevered firm plus the value of any side effects, which include the tax shield and the expected costs due to financial distresses". Titman et al. (2014, 529), there are two factors that can have a material impact on the role of capital structure in determining firm value, which are (1) interest expense is tax deductible, and (2) debt makes it more likely that firms will experience financial distress costs. Myers (1984) on Ullah et al. (2017, 32) mention that, the trade-off theory emerged because the need to balance gains and costs of debt financing. It values the firm as the value of it unlevered plus the present value of the tax shield minus the present value of bankruptcy and agency costs. From the explanation above it can be concluded that in determining firm value, a company have to balance its cost and benefit to achieve the optimum capital structure (Arilyn 2016) . A company would increase its debt financing to avoid financial distresses.

The Pecking Order Theory

Brealey et al. (2015, 482) stated that "Firms prefer to issue debt rather than equity if internal finance is insufficient". Myers and Maljuf on Ullah et al. (2017, 32) also stated that "Firms would prefer internal sources to costly external finance". According to Ullah et al. (2017, 32), "Firms that are profitable and,

therefore, generate high earnings and expected to use less debt than those that do not generate high earnings ". According to Gitman and Zutter (2015, 586), "A hierarchy of financing that begins with retained earnings, which is followed by debt financing and finally external equity financing".

It can be concluded that pecking order theory assumes that a firm is tend to use the internal financing other than the external financing. A firm will use its external financing if only it do not generate high earnings. This means a firm will use retained earnings to finance its activities. If a firm need more funds then a firm chooses to issue debt, and if a firm still needed more funds then equity is issued.

Total Debt Ratio

Gitman dan Zutter (2015, 126) stated that "Debt ratio measures the proportion of total assets financed by the firm's creditors. The higher this ratio, the greater the amount of other people's money being used to generate profits". According to Titman *et al.* (2014, 520), debt ratio measures the extent to which the firm has used non-owner financing (borrowed money) to finance its assets. A higher ratio indicates a greater reliance on non-owner financing or financial leverage. According to Cornett *et al.* (2015, 84), "Debt ratio measures the extent to which the firm uses debt (or financial leverage) versus equity to finance its assets as well as how well the firm can pay off its debt".

Liquidity

Titman *et al.* (2014, 4) stated that liquidity is the speed with which the asset can be converted into cash without loss of value. Liquidity ratio measures the ability of a firm to pay its bills in a timely manner when they come due. Cornett *et al.* (2015, 78) also stated that liquidity ratios measure the relationship between a firm's liquid (or current) assets and its current liabilities. Ross *et al.* (2008, 21) on Tamam and Wibowo (2017, 131) stated that

"Liquidity refers to the ease and quickness with which assets can be converted to cash (without significant loss in value)".

H$_1$ There is an influence of liquidity on total debt ratio of automotive industry

Growth Opportunities

Based on Trisnawati (2016, 35), "*Kemampuan perusahaan untuk mempertahankan posisi usahanya dalam perkembangan ekonomi dan industri dimana perusahaan tersebut beroperasi ditunjukkan oleh rasio pertumbuhan*". According to Setyawan *et al.* (2016, 109), "Growth opportunity *merupakan kesempatan perusahaan untuk melakukan investasi pada hal-hal yang menguntungkan perusahaan*". Filsaraei *et al.* (2016, 29) also stated that "Growth opportunity represents the potential ability of company investment".

H$_2$ There is an influence of growth opportunities on total debt ratio of automotive industry

Firm Size

Mouamer (2011, 230) stated that "Empirically, the total asset, the total sales, or the number of employees typically measures firm's size". According to Brigham and Houston (2011, 119) on Setyawan *et al.* (2016, 109), "Firm size *merupakan rata-rata total aktiva tahun bersangkutan sampai beberapa tahun mendatang*". According to Nugrahani and Sampurno (2012, 3) on Tamam and Wibowo (2017, 131), "Firm size *menggambarkan besarnya aset yang dimiliki perusahaan*".

H$_3$ There is an influence of firm size on total debt ratio of automotive industry

Profitability

According to Gitman and Zutter (2015, 655), "Profitability is the relationship between revenues and costs generated by using the firm's asset—both current and fixed—in productive activities". Based on Cornett *et al.* (2015, 87), "Profitability ratios

show the combined effects of liquidity, asset management, and debt management on the overall operating results of the firm". Brigham *et al.* (2014, 96) stated that "Profitability is the net result of a number of policies and decisions".

H$_4$ There is an influence of profitability on total debt ratio of automotive industry

Firm Age

Based on Chadha and Sharma (2015, 7), age implies better credibility and reputation in the market. Ullah *et al.* (2017, 33) stated that age of the firm is a standard measure of status in capital structure models. Before granting a loan, banks tend to evaluate the creditworthiness of entrepreneurs as these are generally believed to pin high hopes on very risky projects promising high profitability rates. Diamond (1989) on Mouamer (2011, 231) suggests to use firm reputation as a good name a firm has built up over years to

overcome problems associated with the evaluation of creditworthiness. According to Ezeoha and Botha (2012, 59), Firm age can be defined in terms of years of formation, incorporation, or listing.

H$_5$ There is an influence of firm age on total debt ratio of automotive industry

METHOD

The object of this research is automotive companies listed on Indonesia Stock Exchange (IDX) period 1998-2016. Sampling technique used in this study is purposive sampling, based on criteria as follows, (1) Automotive industry companies consistently listed in Indonesia Stock Exchange during the period 1998-2016. (2) Companies that issuing financial report annually per December 31 that are audited by public auditor. The sampling procedure is as follows:

Table 1 Sampling Procedure

Sampling Criteria	Total
Companies of Automotive Industry that is consistently listed on IDX during 1998-2016	10
Automotive companies that is listed on IDX which have outlier data and does not fulfill the criteria of the research	(2)
Number of research period 1998-2016	19
Total data to be used as sample	**152**

Debt ratio measures how much a firm's total assets financed by its debt from the firm's creditors and it represents the extent to which a company can use the debt to finance its assets. The higher the debt ratio, the higher fund that is got from creditors. According to Gitman and Zutter (2015, 126) the equation that is used to calculate the debt ratio is presented as below:

$$Debt\ Ratio = \frac{Total\ Liabilities}{Total\ Asset}$$

Liquidity can be used to measure the ability of a firm to pay its current liabilities in a

given time (maturity date) without significant loss in value. According to Mouamer (2011, 233) liquidity is defined as a ratio of current assets to current liabilities. The measurement is expressed as follows:

$$Current\ Ratio = \frac{Current\ Assets}{Current\ Liabilities}$$

Growth ratio shows the ability of a company to maintain its business position in the economic and industrial development where it operates and growth opportunities is related to a firm's investment opportunities.

Growth opportunities can be measured by the percentage of change the total asset over the last three years (Mouamer 2011, 233). Growth can be calculated as follows:

$$Growth = \frac{TAt - (TAt - 3)}{(TAt - 3)}$$

Firm size is a reflection of total assets owned by the company. The larger the firm size means that the company's assets are larger and the funds required by the company to maintain its operational activities even more. Firm size is measured by the natural logarithm of asset (Mouamer 2011, 233). It is calculated as follows:

$$Size = Ln \times Total\ Asset$$

Profitability represents the ability of a firm to pay its liabilities and to reach the maximum profit. It shows the overall effectiveness of firm in generating profits using firm's assets. According to Ullah *et al* (2017, 32), profitability is defined as net income scaled by total asset. The equation is expressed as follows:

$$Profitability = \frac{Net\ Income}{Total\ Asset}$$

Firm age refers to a firm's reputation that built up over years which can be used as a guarantee to the creditor. It represents a firm's ability to stabilize every economic condition. Based on Mouamer (2011, 233), age is calculated as the present year minus the year of inception.

Age = present year - year of inception

Data analysis method of this study is multiple regression analysis, where there are one dependent variable that is influenced by many independent variables. The data will be quantitatively processed by using Eviews 10.

RESULTS

Table 2 Descriptive Statistic Test Result

	RTD	LQ	G	SIZE	PROFIT	AGE
Mean	0.559607	1.708269	0.483313	28.05070	0.039633	17.50000
Maximum	1.518095	5.365990	5.106273	33.19881	0.324562	36.00000
Minimum	0.165185	0.316288	-0.580914	24.91821	-1.466504	2.000000
Std. Dev.	0.232769	0.931870	0.6515662	2.006161	0.153266	6.878318
Observations	152	152	152	152	152	152

Source: Eviews 10 processing

Table 3 Multiple Regression Analysis Result

Variable	Coefficient	t-statistic	Prob.
C	0.326929	0.405238	0.6859
LQ	-0.106094	-8.002605	0.0000
G	0.001923	0.095858	0.9238
SIZE	0.024397	0.796656	0.4270
PROFIT	-0.509279	-6.433693	0.0000
AGE	-0.014353	-4.131508	0.0001

Source: Eviews 10 processing

The probability value of liquidity (LQ), 0.0000, is lower than the alpha value (α = 0,05), this means that H_1 is accepted. It can be concluded that liquidity have a negative influence (-0.106094). This result is consistent with the previous research done by Ullah *et al.* (2017), Mouamer (2011), and Serghiescu and Văidean (2014). The higher value of liquidity could decrease the value of total debt ratio. Liquidity shows the ability of a firm to meet its financial obligations as they come due. The more liquid a firm, the more capable a firm pay its obligations, therefore it could decrease the value of total debt ratio.

Growth opportunities (G) have a higher probability value than the alpha value (prob. 0.9238 > α 0.05) this means that H_2 is rejected, therefore growth opportunities have no influence on total debt ratio. This result is consistent with Kőksal and Orman (2015).

Firm size (SIZE) have a higher probability value than the alpha value (prob. 0.4270 > α 0.05), this means that H_3 is rejected, therefore firm size have no influence on total debt ratio. This result is a new finding that differs from previous research.

Profitability (PROFIT) has a lower value than the alpha value (prob. 0.0000 < α 0,05), this means that H_4 is accepted. It can be concluded that profitability has a negative influence (-0.509279). The higher value of profitability could decrease the value of total debt ratio. This result is consistent with the previous research done by Ullah *et al.* (2017), Serghiescu and Văidean (2014), Li and Stathis (2017), Kőksal and Orman (2015), Imtiaz *et al.* (2016) and Chadha and Sharma (2015). Profitable firms can use retained earnings to finance its activities and tend to use less external debt, therefore it could decrease the value of total debt ratio. This finding is supported by the pecking order theory.

The probability value of firm age (AGE), 0.0001, is lower than the alpha value (α = 0,05), this means that H_5 is accepted. It can

be concluded that firm age have a negative influence (-0.014353). The higher value of profitability could decrease the value of total debt ratio. This result is consistent with the previous research done by Ullah *et al.* (2017), but inconsistent with Chadha and Sharma (2015) and Mouamer (2011). Age refers to a firm's reputation that built up over years. The longer a firm's existence, the better reputation of a firm in the market. It could attract investors to invest their money in the company in the form of equity financing. Therefore, the value of total debt ratio could decrease.

CONCLUSION

Based on results above, it can be concluded that liquidity, profitability, and firm age have a negative influence on total debt ratio. While growth opportunities and firm size have no influence partially on total debt ratio.

Limitation of this study due to several reasons consists of, (1) Limited number of variable to be used on this research, where only 5 independent variables, which are liquidity, growth opportunities, firm size, profitability, and firm age. (2) Limited number of companies to be used as sample, because this study only examines the capital structure on the automotive industry listed on Indonesia Stock Exchange. (3) Limited number of period chosen which only 19 years of period conduct in this research from 1998 to 2016.

Here are some recommendations that can be used for further research regarding capital structure and total debt ratio, which are, (1) use other research objects besides automotive industry that could provide another findings because the capital structure would have different effects in different industry according to the differences of financial statement, (2) use other additional variables of capital structure that probably influence the total debt ratio, such as taxation and volatility, (3) lengthen the research period to be more updated.

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