

Capital Structure Determinants (Study of Food and Beverage Sub Sector Manufacturing Companies Listed on the Indonesia Stock Exchange 2014-2018)

Ch. Asta Nugraha, Suroto

Business and Economic Faculty UNTAG Semarang

Business and Economic Faculty UNTAG Semarang

Abstract: *The purpose of this study is to find empirical evidence of the determinants of the company's capital structure that is consistently incorporated in the 2014-2018 food and beverage sub-sector. The population of this study are all companies that are consistently incorporated in the food and beverage sub-sector during the study period. The data used are secondary data in the form of company financial statements. The statistical test used to test the hypothesis is panel data regression with the comment effect approach.*

Hypothesis test results show that asset structure has a positive and significant effect on capital structure, conversely profitability and liquidity partially have negative effect but not significantly on capital structure.

Keywords: *Asset Structure, Profitability, Liquidity and Capital Structure.*

Date of Submission: 06-05-2020

Date of Acceptance: 19-05-2020

I. Introduction

Every company in running its business needs funds to finance the company's operational activities[1]. Meeting the funding needs for each company can be sourced from debt or equity. The selection of funding needs requires expertise in its management in which there is a management of capital structure [2].

Capital structure is a proportion in determining company spending needs with long-term funding sources that come from internal funds and external funds[3]. To find out the ideal ratio of debt to equity, companies need a special ratio, namely Debt Equity Ratio [4]. However, [5] explained that Debt to Equity Ratio is a comparison of debt with equity in a company's financial structure. The higher Debt to Equity Ratio, the company has a higher risk to the company's liquidity, and vice versa.

[4], explained that the source of funds originating from debt has a capital cost in the form of debt interest that must be paid every time the debt payment is due. This certainly makes the company must carefully consider how much debt will be taken so that the company's financial stability is always maintained.

The amount of debt used in company operations can be seen from the amount of debt on the balance sheet [6]. The company's debt consists of long-term debt and short-term debt. However, analysts are generally more interested in long-term debt because they have greater value. The relationship between the amount of long-term debt provided by creditors and the equity contributed by the company can be an illustration of the ratio of Long Debt to Equity Ratio.

There is an interesting phenomenon related to the use of long-term debt in food and beverage sub-sector manufacturing companies listed on the Indonesia Stock Exchange in the 2014-2018 period as shown in the following table:

Table 1: Average Long Debt to Equity Ratio, Asset Structure, Return on Equity Ratio and Current Ratio of Manufacturing Companies in the Food and Beverage Sectors.

Variable	Year				
	2014	2015	2016	2017	2018
Long Debt to Equity Ratio	0.378	0.371	0.355	0.308	0.270
StrukturAktiva	0.376	0.382	0.372	0.368	0.480
Return on Equity	0.225	0.165	0.209	0.164	0.139
Current Ratio	2.042	2.077	2.336	2.385	2.459

Resource: Secondary data processed. 2020.

Table 1 above illustrates that in the long run the company's funding for operating activities is highly dependent on equity compared to long-term debt, if conditions are not good enough when the economy is down, it certainly will not have a large liquidity risk for the company.

[7],states that there are several factors that can affect capital structure. These factors can be in the form of asset structure, profitability and liquidity. Furthermore, table 1 also shows the effect of asset structure, profitability and liquidity on the long debt to equity ratio of manufacturing companies in the food and beverage sub-sector on the Indonesia Stock Exchange in the 2014-2018 period. This phenomenon shows the inconsistency of the relationship between the structure of assets, return on equity and the current ratio to the long debt to equity ratio.

Furthermore, in order to support this research, there are several previous studies that serve as supporting journals. Some of the results of these studies are as shown in the following table:

Table 2. Research Gap

Research Gap	Result	Researcher
There is an influence of asset structure on capital structure	Significant positive	Batubara (2017), Sheikh danZongjun (2011), MasnoondanFarrukh (2012)
	Positive is not significant	Putranto (2018)
There is an effect of return on equity on capital structure	Significant positive	Sunhaji (2019)
	Significant negative	Finky (2013), Chen et al. (2014) danSarlijadan Martina (2016)
There is an influence of current ratio on capital structure	Significant positive	Bhatia dan Manish (2016)
	Significant negative	HossaindanAyub (2012), Thomas et al. (2014) danWatung et al. (2016)

Resource: Extracted from various studies

Table 2 above shows the inconsistency of the results of previous studies related to factors that affect capital structure.

Based on the two gaps above, the researcher is interested in conducting research related to "Determinants of Capital Structure in Food and Beverage Sub-Sector Manufacturing Companies Listed on the Indonesia Stock Exchange 2014-2018" with the formulation of the problem whether the variable asset structure, return on equity and current ratio partially effect on capital structure, so this study aims to find empirical evidence of the influence of asset structure, return on equity and current ratio to partially long debt to equity ratio of manufacturing companies in the food and beverage sub sector listed on the Indonesia Stock Exchange in the 2014-2018 period.

THEORETICAL THOUGHTS AND HYPOTHESIS FORMULATION

Capital Structure

Capital structure is a balanceor a comparison between debtsforeigners with equity. According to[8], capital structure is a mixture of long-term debt and equity financing.The theory of modern capital structure first appeared in 1958 when Professor Franco Modigliani and Merton Miller published the theory of capital structure. Research on capital structure has been perfected from time to time until several theories of capital structure appear that are now known throughout the world.

There are two most commonly known theories for determining capital structure, namely the trade-off theory and the pecking order theory. According to[9], trade-off theory is a theory that has long been used and dominates companies so far.

Trade-off theory

The trade-off theory suggests that companies must balance the benefits of funding throughdebt, i.e. tax shield with debt costs [10]. According to this theory, on the one hand debt can provideadvantages in tax reduction, but on the other hand debt provides costs that can burden the company.

Pecking order theory

Pecking order theory puts forward internal funding rather than external funding[11]. There are two rules in pecking order theory, first, use internal funding first, andthen use external funding at the lowest cost.pecking order theory puts forward internal funding rather than external funding. There are two rules in pecking order theory, first, use internal funding first, andthen use external funding at the lowest cost.

This theory is closely related to the theory of information asymmetry, namely the condition of information that is not balanced between management and investors. This imbalance regarding the actual condition of the company can affect the choice between internal or external funding sources, as well as the decision to issue new debt or new equity.

Effect of Asset Structure on Capital Structure

Asset Structure is the relative composition of fixed assets owned by a company. Asset structure is one important factor in capital structure or corporate funding decisions, because if a company is faced with

conditions of financial difficulties in paying its debts, tangible assets or fixed assets owned by the company can be used as collateral to outsiders who provide loans [12].

[13], companies that have large amounts of assets can use a larger debt because they have assets as guarantors. Companies that have large amounts of fixed assets can take large amounts of debt, because large companies that have large assets will have easier access to sources of funds compared to smaller companies that have smaller amounts of fixed assets, the amount of fixed assets can be used as collateral company [14].

[15]which in his research revealed that asset structure has a significant positive effect on capital structure. Thus the first hypothesis is formulated as follows:

H1: The company's asset structure has a significant positive effect on the capital structure of the food and beverage sub-sector manufacturing companies listed on the Indonesia Stock Exchange 2014-2018

Effect of Profitability on Capital Structure

[14], explains Return on Equity is a ratio to measure the ability of companies to obtain profits available to the company's shareholders. This ratio is also influenced by the size of the company's debt. The greater the Return on Equity, the company will choose to use these profits to finance the operations of the company so that it will reduce the use of debt by the company.

[16], Profitability (ROE) research has a negative effect on capital structure, because the greater the profitability obtained by the company, it will reduce the company's capital structure. Companies that have high profits will use relatively low debt. The results of this study are in line with the research of [17],[18], [19],[20]and [21].

Thus, the second hypothesis is formulated as follows:

H2: Company Profitability has a negative effect on capital structure in food and beverage sub-sector manufacturing companies listed on the Indonesia Stock Exchange 2014-2018.

Effect of Liquidity on Capital Structure

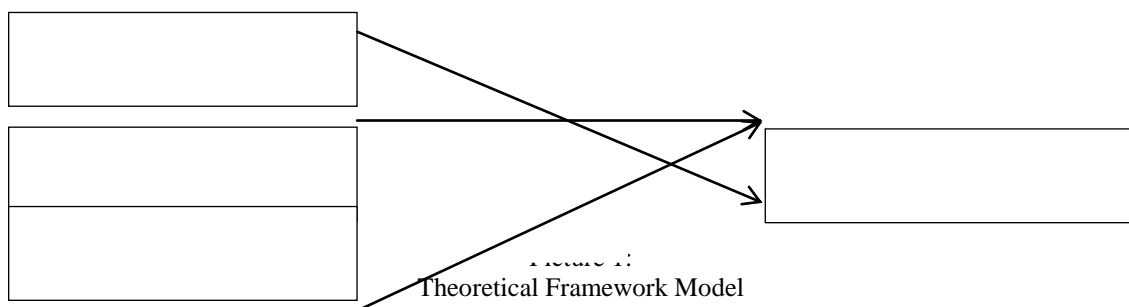
Liquidity indicates the ability of a company to meet short-term financial obligations on time [14]. [11], pecking order theory explains that companies are more inclined to choose to fund companies with internal funds, so this theory predicts a negative relationship between liquidity and capital structure.

[17], in their study stated that companies with a high level of liquidity prefer to use funds generated internally to finance new investments. Research by [22], found that liquidity has a negative effect on capital structure. This finding is supported by [23], [24], [25], and [26].

Based on the description above, the third research hypothesis can be formulated as follows:

H3: Liquidity has a significant negative effect on capital structure in food and beverage sub-sector manufacturing companies listed on the Indonesia Stock Exchange 2014-2018.

Thus the theoretical framework model in this research, can be described as follows:



II. Research Methods

This study is a census study, because the population of this research is all food and beverage sub-sector manufacturing companies with 14 issuers with 70 observations, while the unit of analysis in this study is the audited annual financial statements of companies selected to become the population. The variables of this study are capital structure, asset structure, profitability and liquidity. The operational measurements and definitions of each variable are as shown in the following table:

Table 3: Measurement and Operational Definitions

Variable	Indicator	Formula
capital structure	Long Debt to Equity Ratio	$LDER = \frac{\text{Long Term Debt}}{\text{Equity}}$
Asset Structure	Fixed Assets and Total Assets	$AS = \frac{\text{Fixed Assets}}{\text{Total Assets}}$
Profitability	Return on Equity	$ROE = \frac{\text{EAT}}{\text{Ekuitas}} \times 100\%$
Likuidity	Current Ratio	$CR = \frac{\text{Current Assets}}{\text{Current Liabilities}} \times 100\%$

This study uses secondary data collected from www.IDX.co.id, in the form of a summary of company performance, financial reports and annual report for the 2014-2018 period.

III. Research Result

The first step that must be done before conducting a statistical test is screening of the data to be processed[27]. The screening results obtained 9 observations declared outlier and outlier data was immediately excluded from subsequent calculations so that the data changed from 70 observations to 61 observations.

The analytical tool used to test the hypothesis is panel data regression with the common effect approach with the help of SPSS version 23 and a significance level of 5% ($\alpha = 0.05$). The panel data regression model used is as follows:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

where:

Y : Long Debt to Equity Ratio

α : Constant

$\beta_1 \beta_2 \beta_3$: Regression Coefficient

X_1 : Asset structure

X_2 : Return on Equity

X_3 : Current Ratio

ε : Error / distraction variable

The results of the panel output regression estimation model with the common effect approach are as the following table:

Table 3: Estimation Results of the Panel Data Regression Model

Dependent Variable: SQRT_LDER

Variable	Coefficient	Std. Error	t-Statistic	Sig
C	3.166	2.277	1.391	0.170
SQRT_AS	0.599	0.208	2.876	0.006
SQRT_ROE	-0.075	0.216	-0.347	0.730
SQRT_CR	-0.002	0.070	-0.022	0.982
R-squared		0.169	F-statistic	3.869
Adjusted R-squared		0.125	Sig	0.014

Resource : Secondary Data has been processed, 2020

From the SPSS output display above the panel data regression equation is obtained as follows:

$$SQRT_LDER = 3.166 + 0.599 SQRT_AS - 0.075 SQRT_ROE - 0.002 SQRT_CR$$

A good regression model should not occur violations of the assumption of residual normality and classical assumptions[27]. For this reason, a normality assumption test is performed with skewness and kurtosis, while the classic assumption test consists of multicollinearity testing by looking at the tolerance value and Variance Inflation Factor, autocorrelation test using Durbin Watson, while the heteroscedasticity test uses Glejser.

Normality test

Skewness and kurtosis test results show that the estimation results of the panel data regression model mentioned above do not indicate violations of the normality assumption. The SPSS output results are as the following table:

Table 4: Normality Test Results with Skewness and Kurtosis

Variable	N	Z_Skewness	Z_Kurtosis	Z_Critical	Conclusion
Unstandardized Residual	61	0.179	-0.952	±1.96	Normal

Resource : Secondary Data has been processed, 2020

Classic assumption test

The classic assumption test results show there is no indication of a violation of the classic assumption, because there is no correlation between independent variables, there is no correlation between residuals of period t with residuals period t-1 (previous) and the residual variant of one observation to another observation remains. The output is as the following table:

Table 5: Multicollinearity Test Results

Variable	Tolerance	VIF
SQRT_AS	0.756	1.323
SQRT_ROE	0.908	1.101
SQRT_CR	0.711	1.406

Resource : Secondary Data has been processed, 2020

Table 6: Autocorrelation Test Results with Durbin-Watson

Du	Dorbin Watson	4 - Du	Information
1,690	1,892	2,310	No autokorelasi

Resource : Secondary Data has been processed, 2020

Table 7: Heteroscedasticity Test Results With the Glejser Test
Dependent Variable: Abs_Res

Variable	Coefficient	Std.Error	t-Statistic	Sig
C	0.616	1.241	0.496	0.621
SQRT_AS	0.096	0.114	0.846	0.401
SQRT_ROE	-0.010	0.118	-0.087	0.931
SQRT_CR	0.021	0.038	0.547	0.586

Resource : Secondary Data has been processed, 2020

Model Test

The model test results show that the model is declared fit, because it is able to explain 16.90 percent of the variation of capital structure from the average, while the remaining 83.10 percent is caused by other variables not included in this regression model. The output is as the following table:

Table 8: Model Test Results

Model	R- square	Adjusted R-squared	F-statistic	Sig
1	0.169	0.125	3.869	0.014

Resource : Secondary Data has been processed, 2020

Significance Test of Individual Parameters

The results of the test of the significance of individual parameters for each independent variable measured by the structure of assets, Return on Equity and Current Ratio partially or individually obtained results that only the variable structure of assets that were declared significant and the first hypothesis, were accepted. The outs are like the following table:

Table 9: Test Results of Significance of Individual Parameters
Dependent Variable: SQRT_LDER

Variable	Coefficient	Std.Error	t-Statistic	Sig
C	3.166	2.277	1.391	0.170
SQRT_AS	0.599	0.208	2.876	0.006
SQRT_ROE	-0.075	0.216	-0.347	0.730
SQRT_CR	-0.002	0.070	-0.022	0.982

Resource : Secondary Data has been processed, 2020

IV. Discussion

Effect of Asset Structure on Capital Structure

Based on Table 9, the regression coefficient of the SQRT AS variable is positive at 0.599 with a significance value of 0.006 smaller than $\alpha = 0.05$, so it is said that the asset structure has a positive and

significant effect on the capital structure. This shows that companies that have a large amount of assets can offer their assets to creditors as collateral and benefit from existing opportunities due to additional long-term debt.

The results of this study are in accordance with what was found by Sheikh and Zongjun (2011), Masnoon and Farrukh (2012), and Putri (2012) that the structure of assets had a significant positive effect on capital structure.

Effect of Profitability on Capital Structure

Based on Table 9, the SQRT regression coefficient of return on equity is negative at 0.075 with a significance value of 0.730 greater than $\alpha = 0.05$, so it is said that profitability is not a significant negative effect on capital structure.

The results of this study contradict the pecking order theory, the probable cause is that when the company gets additional profits, especially in 2016 it is not used as an internal funding source for investment financing needs, but rather the company prefers additional long-term debt as an investment financing requirement so that the level of debt or funding can pressed in the future can reduce the risk of failure to fulfill obligations such as interest costs and bankruptcy conditions.

The results of this study also contradict the results of Finky's (2013) research, which proves that return on equity has a negative and significant effect on the Capital Structure in the Property and Real Industries and Chen et al (2014). It also proves that return on equity has a negative and significant effect on the capital structure of non-financial companies listed on the Chinese stock exchange in 2011.

Effect of Liquidity on Capital Structure

Based on Table 9, the current ratio regression coefficient is negative at 0.002 with a significance number of 0.730 greater than $\alpha = 0.05$, so it is said that liquidity has no significant negative effect on capital structure.

The results of this study contradict the pecking order theory, companies with high liquidity conditions tend to choose to use internal funding in terms of corporate operational financing. This finding also contradicts the results of the research of Hossain and Job (2012), who found evidence that the current ratio has a significant negative effect.

Apart from that it also contradicts the results of the research of Thomas et al. (2014), Wahab and Nur (2014), and Watung et al. (2016) who found evidence that the current ratio has a positive and significant effect on capital structure. This difference is likely due to many unproductive current assets, so the return on equity decreases.

V. Conclusions And Suggestions

Based on the analysis of the results of the study described earlier, it can be concluded that the structure of assets has a positive and significant effect on capital structure, while profitability and liquidity have a partially negative effect, but not significantly on the capital structure.

As for suggestions that can be used as a consideration of further research, first this study uses the comment effect model, then it is recommended for further research to test the model so that the correct model is obtained either fixed effect model or random effect model. The next two studies add additional independent variables such as company growth or business risk.

References

- [1]. D. F. Permatasari, Diana dan Azizah, "Pengaruh Struktur Modal Terhadap Nilai Perusahaan (Studi Pada Perusahaan Sub Sektor Makanan Dan Minuman Yang Terdaftar Di Bursa Efek Indonesia Tahun 2013-2016)," *J. Adm. Bisnis*, vol. 61, no. 4, 2018.
- [2]. S. Ahmad, *Analisis Faktor-Faktor Yang Berpengaruh Terhadap Debt to Equity Ratio (Perbandingan Perusahaan Manufaktur Kategori Indeks Papan Utama dan Indeks Papan Pengembang BEI tahun 2013 – 2015)*. Semarang: Fakultas Ekonomi UNDIP, 2017.
- [3]. B. Riyanto, *Dasar-dasar Pembelanjaan Perusahaan*. Yogyakarta: Yayasan Badan Gajah Mada, 2010.
- [4]. A. E. Januarti, Indria dan Achmad Eko Prasetyo, "Analisis Faktor-Faktor Yang Mempengaruhi struktur Modal Pada Perusahaan Manufaktur yang Terdaftar di Bursa Efek Indonesia Periode 2011-2014," *Diponegoro J. Account.*, vol. 4, no. 4, 2015.
- [5]. S. Husnan, *Manajemen Keuangan Teori dan Penerapan (Keputusan Jangka Panjang)*, 4th ed. Yogyakarta: BPFE, 2004.
- [6]. L. Syamsuddin, *Manajemen Keuangan Perusahaan*. Jakarta: Raja Grafindo Indonesia, 2009.
- [7]. J. F. H. Bringham, Eugene F., *Essentials of Financial Management*. Jakarta: Salemba Empat, 2011.
- [8]. M. Brealey, R. A., Myers, S. C. and A. J., *Fundamentals of Corporate Finance*, 7th ed. United States: The McGraw-Hill Companies, Inc., 2012.
- [9]. J. J. Ross, S. A., Westerfield, R. W., *Corporate Finance*, 9th ed. New York: The McGraw- Hill Companies, Inc, 2010.
- [10]. R. W. J. J. Ross, S. A; Westerfield, *Corporate Finance*, 9th ed. New York: The McGraw- Hill Companies, Inc., 2010.
- [11]. S. H. Enny, Pudjiastuti., *Dasar-Dasar Manajemen Keuangan*, 6th ed. YOGYAKARTA: UPP STIM YKPN, 2012.
- [12]. M. U. Mai, "Analisis Variabel-Variabel yang Mempengaruhi Struktur Modal Pada Perusahaan-Perusahaan LQ-45 di Bursa Efek Jakarta," *Ekonomika*, pp. 228–245, 2006.
- [13]. J. F. T. E. C. Weston, *Manajemen Keuangan*, Kesembilan. Jakarta: Binarupa Aksara, 1997.
- [14]. A. Sartono, *Manajemen Keuangan Teori dan Aplikasi*, Keempat. Yogyakarta: BPFE Yogyakarta, 2012.

- [15]. F. A. Masnoon, Maryam., "Capital Structure Determinants of KSE Listed Pharmaceutical Companies," *GMJACS*, vol. 2, no. 1, pp. 19–38, 2012.
- [16]. G. S. A. Pertiwi, Aditya Putri Ni Wayan ., Luh, "Pengaruh Risiko Bisnis, Profitabilitas dan Keputusan Investasi Terhadap Struktur Modal," *E-Jurnal Manaj. Univ. Udayana*, vol. 3, no. 8, pp. 2456–2470, 2014.
- [17]. Z. W. Sheikh, Nadeem Ahmed., "Determinants of Capital Structure An Empirical Study of Firms in Manufacturing Industry of Pakistan," *Manag. Financ.*, vol. 37, no. 2, pp. 117–133, 2011.
- [18]. L. K. S. Gamaliel, Joshua., "Pengaruh Profitabilitas, Ukuran Perusahaan, dan Ukuran Perusahaan dan Struktur Aktiva Terhadap Struktur Modal Pada Perusahaan Transportasi Di BEI," *E-Jurnal Manaj. Univ. Udayana*, vol. 4, no. 1, pp. 59–74, 2015.
- [19]. S. Angelo, Cortez., Michael Susanto., "The Determinants of Corporate Capital Structure: Evidence From Japanese Manufacturing Companies," *J. Int. Bus. Res.*, vol. 11, no. 3, 2012.
- [20]. M. Y. R. Muhammad, Muzaffar Saeed., Ammar Ali Gull., "Impact of Capital Structure on Bnaking Performance (A Case Study of Pakistan)," *Interdiciplinary J. Contemp. Res. Bus.*, vol. 14, no. 10, pp. 393–403, 2013.
- [21]. M. D. Kartika, I Komang Suarnata., "Analisis Pengaruh Profitabilitas, Likuiditas, Ukuran Perusahaan, dan Tingkat Pertumbuhan Terhadap Struktur Modal Perusahaan Food And Beverage yang terdaftar di BEI," *E-Jurnal Manaj. Univ. Udayana*, vol. 4, no. 3, pp. 606–625, 2015.
- [22]. A. A. Hossain, Faruk., "Impact of Firm Specific Factors on Capital Structure Decision: An Empirical Study of Bangladeshi Companies," *Int. J. Bus. Res. Manag.*, vol. 3, no. 4, pp. 163–182, 2012.
- [23]. G. B. Thomas, Kiptanui Tarus., Nehemiah Chenuos., "Do Profitability, Firm Size, and Liquidity Affect Capital Structure? Evidence from Kenyan Listed Firms," *Eur. J. Bus. Manag.*, vol. 6, no. 28, pp. 119–124, 2014.
- [24]. N. A. R. Wahab, Siti Nur Aqilah Ab., "The Determinants of Capital Structure: An Empirical Investigation on Malaysian Listed Government Linked Companies," *Int. J. Econ. Financ. Issues*, vol. 4, no. 4, pp. 930–945, 2014.
- [25]. I. S. S. H. D. T. Watung, Abraham Kelli Sion., "Pengaruh Rasio Likuiditas, Aktivitas, Profitabilitas, dan Struktur Aktiva terhadap Struktur Modal Industri Barang Konsumsi di Bursa Efek Indonesia," *J. EMBA*, vol. 4, no. 2, pp. 726–737, 2016.
- [26]. L. N. I. Andarsari, Fitriani Dwi., Agung Winarno., "The Effect of Liquidity, Cooperative Size, and Profitability on the Capital Structure Among Koperasi Wanita In Malang, East Java," *IOSR J. Bus. Manag.*, vol. 18, no. 7, pp. 49–53, 2016.
- [27]. I. Ghozali, *Analisis Multivariate SPSS*, Keempat. Semarang: Universitas Diponegoro, Semarang., 2006.

Ch. Asta Nugraha, et. al. "Capital Structure Determinants (Study of Food and Beverage Sub Sector Manufacturing Companies Listed on the Indonesia Stock Exchange 2014-2018)." *IOSR Journal of Economics and Finance (IOSR-JEF)*, 11(3), 2020, pp. 26-32.