Determinant Factors that Affect Manufacturing Sectors Profitability: An Evidence from Consumer Goods Industry, Indonesia

Sahrial NST, Rasyimah, Ghazali Syamni and Wardhiah
Department of Management
Faculty of Economics and Business
Universitas Malikussaleh
Bukit Indah, Blang Pulo, Muara Satu, 24355 Aceh Utara, Indonesia
sahrialnasution57@gmail.com, rasyimah@unimal.ac.id ,
ghazali.syamni@unimal.ac.id, wardhiah@unimal.ac.id

Hakim Muttaqim
Department of Economics
Universitas Almuslim
Peusangan, 24261 Bireuen, Aceh, Indonesia
hakimmuttaqim11@gmail.com

Jumadil Saputra
Faculty of Business, Economics and Social Development
Universiti Malaysia Terengganu
21030 Kuala Nerus, Terengganu, Malaysia
jumadil.saputra@umt.edu.my

Abstract

Consumer Goods Industry (CGI) is one form of the manufacturing sector and promising choice in contributing to Indonesia's economic growth. Therefore, CGI always requires maintaining and increase the company's profit to encourage the country's economy. To achieve its objective, CGI needs to attract more and more investment and expand its business into national and even to international levels. Usually, the companies seeking additional funds; thus, they need issuing and selling the securities product such as bonds or shares to the public. In line with the previous elaboration, the present study examines determinant factors that affect manufacturing sectors profitability (Consumer Goods Industry) in Indonesia Stock Exchange. This study is designed using a quantitative approach through panel data series. The data collected from the online financial statement of 34 manufacturing listed companies for 2014 to 2018 using purposive sampling method and analysed using static panel data regression by assisting the econometric software, namely EVIEWS. This study found that operating leverage has a significant positive effect on manufacturing sectors profitability. Meanwhile, the company size has a significant negative effect on manufacturing sectors profitability. Besides that, debt to equity ratio, current ratio and company growth does not affect manufacturing companies' CGI profitability in the Indonesian Stock Exchange. This study's findings indicate that manufacturing companies in the Consumer Goods Industry sector need to increase their operating leverage because optimal operating leverage can increase profitability. Also, it is necessary to study the company size's efficiency level due to inefficient company size reduces the level of profitability of CGI companies.

Keywords:
Operating leverage, debt to equity ratio, current ratio, company size and growth, profitability, manufacturing sectors (Consumer Goods Industry).

1. Introduction
Companies in the consumer goods industry sector are companies that process raw materials into finished goods for the community. In the capital market, the consumption sector company is one of the sectors that plays an important role in improving the performance of the capital market index. Data on the Indonesia Stock Exchange has been added yearly as a form of privatization to the capital market. In 2019, there were 54 companies in the consumer goods industry sector out of a total of 668 companies included in the Indonesia Stock Exchange. This shows that the business continuity of the consumer goods industry sector is potentially in good prospects. How a company entity survive is determined by several factors. One factor is company's ability to generate profits, which are proxied, among others; return on assets, return on assets, net profit and operating profit over a certain period of time (Ernawati and Widyawati, 2015). One of the proxies that researchers use related to profitability is return on assets (ROA). Fahmi (2016) defined ROA as a ratio that analyzes the company's ability to generate returns on invested funds. Companies with a stable rate of return on assets or better represent the condition and position of the company into the future. This is due to the fact that investors tend to be careful in choosing companies as places to invest (Musnadi et al. 2019). Profitability is used as an important indicator by stakeholders in a company without ignoring regulations determined by the government (Syamni et al. 2018). The company's profitability is not always normal and shows fluctuation sometimes. This also applies to companies in the consumer goods industry sector operating in Indonesia. Thus, the purpose of this study is to examine several factors affecting profitability in the consumer goods industry sector companies in Indonesia.

2. Literature Review
This section describes the literature review related to several previous studies on factors affecting profitability in the consumer goods industry sector companies. In this study, the factors analyzed are capital structure, liquidity (current ratio), operating leverage, company growth and company size.

2.1 The effect of capital structure on profitability
Capital structure is a balance between capital and company debt. Siegel and Shim (2016) stated that capital structure is a balance of all forms of shares and long-term debt in the company. The use of the capital structure, either capital or debt, has an impact on the company's profitability level eventough the impact received by the company is inconsistent. A study in Indonesia by Susilo et al. (2020) found that capital structure does not affect profitability. Another study in Indonesia by Wijaya et al. (2020) revealed that capital structure has a significant negative effect on profitability. Margaretha and Khairunisa (2016) stated that the capital structure variable does no have a significant effect on company profitability. Meanwhile, in Pakistan, Devi and Devi (2014) found that there is a relationship between capital structure and company profitability. In addition, Shubita and Alsawalhah (2012) in Jordan stated that capital structure has a negative effect on company profitability.

2.2 The effect of the current ratio on profitability
One of the liquidity ratios is the current ratio. Current ratio is the ratio to analyze the company's ability to meet short-term obligations before reaching due date (Fahmi, 2016). The company's ability to pay off short-term obligations allows the company to affect profitability. Research in Turky by Isik and Tasgin (2017) and Işık (2017) found that company liquidity determines company profitability. While research in Malaysia, Alarussi et al. (2018) stated that there is no relationship between company liquidity and profitability. However, other research in Malaysia by Ghasemi and Razak (2017) revealed that company liquidity has a positive effect on companies. Research by Nguyen and Nguyen (2020) found that liquidity has a positive effect on the profitability of different industrial companies in Vietnam. Saripalle (2018) also found the same result that liquidity affects the profitability of logistics companies in India, while research in Indonesia Margaretha and Khairunisa (2016) found that the current ratio does not affect the company's profitability.

2.3 Effect of operating leverage on profitability

Operating leverage is the use of fixed costs that a company must incur in its operations. Operating leverage which is proxied by the degree of operating leverage (DOL) in the company must be well managed due to the way it works which makes additional profits but can also deepen losses (Utari, 2014). In addition, García - Feijóo and Jorgensen (2010) explained that degree operating leverage can increase firm value. Degree of operating leverage (DOL) is measured as by the percentage of change in profit before interest and tax divided by the change. Several recent studies found that the degree of operating leverage of the company is still inconsistent. Research by Asche et al. (2018) in Norway found that operating leverage has a significant positive effect on profitability. Gatsi et al. (2013) using data from insurance companies in Ghana found that operating leverage is positively related to profitability. Kumar (2014) found that operating leverage has a positive effect on profitability in India. Prior research by Pontoh and Ilat (2013) using Indonesian data found that degree operating leverage has a negative effect on company profitability.

2.4 The influence of company growth on profitability

The company's growth represents the ability to maintain the company's position and condition amid various economic conditions (Kasmir, 2015). The company's ability to maintain the company's condition allows an increase in the company's profitability. Khan et al. (2018), who focuses on the telecommunications sector in India, revealed that company growth has a positive effect on profitability. Ghasemi and Razak (2017) in Malaysia stated that company growth has a negative effect on company profitability. Meanwhile, research in Sweden by Azdanfar (2013) discovered that company growth has a positive effect on profitability. Even research in America and the European Union shows that company growth affects the profitability of food industry companies (Gschwandtner and Hirsch, 2018). In similar vein, research in Indonesia by Susilo et al. (2020) also found that company growth has a positive effect on the profitability of manufacturing companies in Indonesia.

2.5 The effect of company size on profitability

The size of the company is represented as the success of the company which is represented by the total assets, total sales, total profit, tax expense, and market value. Several studies indicate that company size have a positive effect on company profitability (Alarussi et al. 2018; Khan et al. 2018; Isik et al. 2017; Ghasemi and Razak, 2017; Azdanfar, 2013)

3. Methods

3.1 Data

This study uses secondary data from the financial statements of manufacturing companies in the consumer goods industry sub sector. The data was obtained by accessing the ojk.go.id website and the respective websites of 34 of the 54 industrial consumer goods sector companies during the 2014-2018 period, totaling 170 observations. Delisted data as well as complet and audited financial reports during the study sampling period were not available for as many as 20 companies.

3.2 Models

Based on the data used, namely panel data, this research method is a static panel data regression model approach.

$$ROA_{it} = \propto_{it} + \beta_1 DER_{it} + \beta_2 CR_{it} + \beta_3 DOL_{it} + \beta_4 Growth_{it} + \beta_5 Size_{it} + \varepsilon_{it} : \text{Dimana:}$$

ROA   = Return on asset sebagai proksi dari profitabilitas
$\propto$ = Constan konstanta
ß1, ß2, ß3, ß4 = Koefisien regresi koefisien regresi
DER   = Debt equity ratio
CR   = current ratio
DOL   = *Degree of operating leverage*
Growth   = company growth
SIZE   = Company siza
eit   = *Error term* on company i periode t

4. Results and Discussion

4.1 Results

The initial discussion of the research results describes a description of the research variables which include the mean, median, standard deviation, maximum value and minimum value. Next, the best model of testing results and selected models in this study will be discussed, then end with a discussion of the research results. Descriptive analysis describes the mean, median, maximum, minimum standard deviation and the number of observations. The description of each research variable used in this study can be seen in Table 1 below.

Table 1. Data description of the research variables

Variabel	Mean	Median	S.D	Max	Min	Obs.
ROA	11.10	7.61	13.73	92.11	-17.61	
DER	62.48	28.24	99.59	944.73	0.00	
CR	149.41	102.17	177.70	863.78	0.58	170
DOL	-45.34	0.84	502.39	439.47	-6411.82	
GROWTH	1.12	0.07	1.12	14.23	-0.74	
SIZE	23.17	26.56	30.53	30.53	13.13	

Based on Table 1 above, it can be explained that the variables ROA, DER, CR, DOL, AND SIZE have a standard deviation value that is greater than the average value. This shows that all data fluctuates greatly, except for growth. ROA has a maximum value of 92.11% with a minimum value of -17.61%. Furthermore, DER has a maximum value of 944.73 with a minimum value of 0.00, meaning that there is a possibility that manufacturing companies in the consumer goods industry sector do not carry out activities in a certain period of time. Then the CR variable has a maximum value of 863.78% with a main value of 0.58%. DOL has a maximum value of 439.47% with a minimum value of -6411.82%. and GROWTH has a maximum value of 14.23% with a minimum value of -0.74%. and the last variable SIZE has a maximum value of 30.53% with a minimum value of 13.13%

The results of research regression where the dependent variable is profitability which is proxied by return on assets. Meanwhile, the independent variable is the capital structure (DER), the liquidity ratio is proxied by the current ratio (CR), degree of operating leverage (DOL), company growth (GROWTH) and company size (SIZE). The study was tested with a panel regression model with the common effect model, fixed effect model and random effect model approach. After doing the Chow and Hausman model tests, it was found that the best model in this study was the fixed effect model (Table 2). The Chow test results showed that the value of the Chi 2 Cross-section is 33 and significant at the 1 percent level. This can be interpreted that the fixed effect model was selected and continued to the Hausman test. The results of the Hausman test found that the cross-section value was random 5 and significant at 5%. It can be concluded that the best model in this study is the fixed effect model (Widarjono, 2013).

Table 2. The results of the regression of the independent variable on the dependent variable

Variabel	Common Effect Model		Fixed Effect Model		Random n Effect Model	
	Coeff.	t-statistic	Coeff.	t-statistic	Coeff.	t-statistic
C	30.3204	7.055***	36.2485	0.4698	30.9121	4.8309***
DER	0.0131	1.3076	0.0059	0.4576	0.0096	1.3868
CR	0.0012	0.2220	-0.0016	-0.1004	0.0007	0.1144
DOL	0.0017	0.8420	0.0032	1.8019*	0.0027	1.9711*
GROWTH	-0.3556	-0.4008	-1.3524	-1.6866*	-1.0417	-0.4238
SIZE	-0.8663	-4.9836***	-1.0739	-0.3212	-0.8713	-3.0452***
R^2	0.1486		0.5473		0.0883	
F-Statistic	5.7260***		4.1680***		3.1765	
Chow Test	Cross section Chi Square : 33***					
Hausman Test	Cross section Random : 5**					

Based on Table 2 above, it can be explained that two of the five independent variables affect company profitability (ROA), namely: operating leverage (DOL), and firm size (SIZE). While the other three variables; capital structure (DER), current ratio (CR), and company growth (GROWTH) do not significantly affect ROA. The static panel data regression equation in this study is as follows:

ROA = 30.9121 + 0.0096DER + 0.0007CR + 0. 0027DOL* - 1.0417*GROWTH** -0.8713*SIZE*

Table 2 above indicates that The constant value (C) is 30.9121, meaning that if the variables of capital structure, current ratio, operating leverage, company growth and company size are constant, then profitability remains constant 30.9121 points. The DER coefficient value has a positive relationship with ROA of 0.0096, this means that if DER increases by 1 point, ROA will increase by 0.0096 points. The coefficient value of the CR variable has a positive relationship with ROA of 0.0007, this means that if the CR increases by 1 point, the ROA will increase by 0.0007 points. The coefficient value of the DOL variable has a positive relationship with ROA of 0.0027, this means that if DOL increases by 1 point, the ROA will increase by 0.0027 points. The coefficient value of the GROWTH variable has a negative relationship with ROA of - 1.0417, this means that if GROWTH increases by 1 point, ROA will decrease by 1.0417 points. The SIZE variable coefficient value has a negative relationship with ROA of -0.8713, this means that if the size increases by 1 point, the ROA will decrease by -0.8713 points. The results of the F test found that the F-count is 3.1765 with an F-table value of 2.27 which means that the F-count> F-table means that all independent variables as a whole affect the profitability variable. The R-Square value is 0.5473 or 54.73%. This shows that ROA can only be explained by the variables DER, CR, DOL, Growth, and Size of 54.73%. While the rest is explained by other factors which were not analyzed in this study.

4.2 Discussion
4.2.1 The effect of DER on return on assets
The results of the study found that the capital structure variable (DER) has no effect on the profitability of manufacturing companies in the consumer goods industry sector. This finding is consistent with the results of the study by Susilo et al. (2020) who found that the capital structure did not affect profitability. Margaretha and Khairunisa (2016) who analyzed small and medium enterprises in Indonesia. This indicates that the high debt composition has not been able to boost the profitability of manufacturing companies operating in Indonesia.

4.2.2 The effect of CR on return on assets
The results of the study found that the curren ratio had no significant effect on profitability in manufacturing companies in the consumer goods industry sector on the Indonesia Stock Exchange. This finding is in line with Margaretha and Khairunisa (2016) who focus their research on small and medium business. Research by Alarussi et al. (2018) revealed that the current ratio or (CR) did not significantly affect the profitability of companies on the Bursa Malaysia. This finding indicates that generally companies in the consumer goods industry sector are able to pay off their short-term obligations when the payments are due. Nevertheless, the level of current ratios has not been able to leverage the company's profitability.

4.2.3 The effect of DOL on return on assets
The results of this study found that degree operating leverage (DOL) has a significant positive effect on profitability (ROA) in manufacturing companies in the consumer goods industry sector on the Indonesia Stock Exchange. This finding is in line with several previous research by Asche et al. (2018) who focused on the salmon industry in Norway; Gatsi et al. (2013) who focused on insurance companies in Ghana and Kumar (2014) who focused on Bata companies in India stated that degre operating leverage had a positive effect on companies. This happens because the greater the production cost, which is fixed, the greater the effect of leverage in boosting company profits.

4.2.4 The influence of growth on return on assets
The results of this study found that the company growth variable has a significant negative effect on Profitability (ROA) in manufacturing companies in the consumer goods industry sector on the Indonesia Stock Exchange. This finding is in line with Ghasemi and Razak (2017) in Malaysia who stated that company growth has a negative effect on company profitability. This finding indicates that the Indonesian consumer goods industry sector companies are still in the process of company growth. However, the company's growth has not been able to be accompanied by an increase in company profits.

4.2.5 The effect of SIZE on return on assets

The results of the study found that company size has no significant effect on profitability in manufacturing companies in the consumer goods industry sector on the Indonesia Stock Exchange. This finding is not in line with several previous studies (Alarussi et al. 2018; Khan et al. 2018; Isik et al. 2017; Ghasemi and Razak, 2017; Azdanfar, 2013). This finding indicates that manufacturing companies tend to use external capital loans in their operations. The use of larger capital is still done to be able to compete or survive in the industry. However, the external capital loan only adds to the burden of the company's debt, thereby reducing its profitability.

5. Conclusion
There are five independent variables discussed in this study, namely capital structure, current ratio, operating leverage, company growth, and company size with profitability as the dependent variable. After the regression analysis was carried out, it was found that two variables among the five independent variables could significantly influence the profitability of the consumer goods industry company, namely the degree of operating leverage variable and the company growth variable. However, the three other variables, namely capital structure, current ratio, and company growth do not significantly affect the company.

References
Alarussi, A.S. and Alhaderi, S.M. "Factors affecting profitability in Malaysia", *Journal of Economic Studies*, Vol. 45 No. 3, pp. 442-458, 2018. https://doi.org/10.1108/JES-05-2017-0124

Asche, F., Sikveland, M., and Zhang, D. Profitability in Norwegian salmon farming: The impact of firm size and price variability. *Aquaculture Economics & Management*, *22*(3), 306-317, 2018

Azdanfar, D. "Profitability determinants among micro firms: evidence from Swedish data", *International Journal of Managerial Finance*, Vol. 9 No. 2, pp. 151-160, 2013. https://doi.org/10.1108/17439131311307565

Devi, A., and Devi, S. Determinants of firms' profitability in Pakistan. *Research Journal of Finance and Accounting*, *5*(19), 87-91, 2014.

Ernawati, D., and Widyawati, D. Pengaruh profitabilitas, leverage dan ukuran perusahaan terhadap nilai perusahaan. *Jurnal Ilmu & Riset Akuntansi*, *4*(4), 1-17. 2015.

Fahmi. Pengantar Manajemen Keuangan. Bandung. Alfabeta, 2016.

García-Feijóo, L., and Jorgensen, R. D. Can operating leverage be the cause of the value premium? *Financial Management*, *39*(3), 1127-1154, 2010.

Ghasemi, M., and AB Razak, N. H. Determinants of profitability in ace market bursa malaysia: evidence from panel models. *International Journal of Economics& Management*, *11*. 2017.

Gschwandtner, A., and Hirsch, S. What drives firm profitability? A comparison of the US and EU food processing industry. *The Manchester School*, *86*(3), 390-416, 2018.

Işık, Ö. Determinants of profitability: Evidence from real sector firms listed in Borsa Istanbul. *Business and Economics Research Journal*, *8*(4), 689-698, 2017.

Isik, O., and Tasgin, U. F. Profitability and its determinants in Turkish manufacturing industry: Evidence from a dynamic panel model. *International Journal of Economics and Finance*, *9*(8), 66-75, 2017

Isik, O., Unal, E. A., and Unal, Y. The effect of firm size on profitability: evidence from Turkish manufacturing sector. *Journal of Business Economics*, 2017

Kasmir. Analisis Laporan Keuangan. PT. Raja Grafindo Persada. Jakarta. 2015.

Khan, T., Shamim, M., and Goyal, J. Panel data analysis of profitability determinants: Evidence from Indian telecom companies. *Theoretical Economics Letters*, *8*(15), 3581-3593, 2018

Kumar, D. M. An empirical study on relationship between leverage and profitability in Bata India Limited. *International Journal of Advance Research in Computer Science and Management Studies*, *2*(5), 2014.

Margaretha, F., and Khairunisa, K. Pengaruh Struktur Modal Dan Likuiditas Terhadap Profitabilitas Pada Usaha Kecil Dan Menengah Di Indonesia. *Jurnal Manajemen Teknologi*, *11*(2), 2016.

Musnadi, S., Syamni, G., Saputra, J., and Prasetyo, M. Factors influencing the capital structure of sharia construction and building companies. *Opción*, *35*(89), 436-454, 2019

Nguyen, T. N. L., and Nguyen, V. C. The determinants of profitability in listed enterprises: A Study from Vietnamese Stock Exchange. *The Journal of Asian Finance, Economics, and Business*, *7*(1), 47-58, 2020.

Pontoh, W., and Ilat, V. Determinant capital structure and profitability impact (study of listed company in Indonesian Stock Exchange). *Research Journal of Finance and Accounting*, *4*(15), 43-49, 2013.

Saripalle, M. Determinants of profitability in the Indian logistics industry. *International Journal of Logistics Economics and Globalisation*, *7*(1), 13-27, 2018

Shubita, M. F., and Alsawalhah, J. M. The relationship between capital structure and profitability. *International Journal of Business and Social Science*, *3*(16), 104-112, 2012.

Siegel, J. G., & Shim, J. K. *Accounting handbook*. Barron's Educational Series. 2006.

Susilo, D., Wahyudi, S., and Demi Pangestuti, I. R. Profitability determinants of manufacturing firms in Indonesia. International Journal of Economics and Business Administration, 8(2), 53-64, 2020.

Syamni, G., Rasyimah, R., Ratnasari, D., and Majid, M. S. A. Determination of return on assets of the foreign exchange banks in Indonesia. *Binus Business Review*, *9*(3), 255-260, 2018.

Utari, D., Purwanti, A., and Prawironegoro, D. Manajemen Keuangan. *Jakarta: Mitra Wacana Media.* 2014.

Wijaya, E., Asyik, N. F., & Fadrul, F. Capital structure and profitability of LQ45 Index in Indonesia: Pecking Order Theory Approach. *Journal Applied Business and Technology*, *1*(2), 69-75, 2020.

Biographies

Sahrial NST was born on March 17, 1997 in Jambur Baru, Mandailing Natal, North Sumatra. He is an undergraduate student at the Department of Management, Faculty of Economics and Business, Universitas Malikussaleh Lhokseumawe Aceh, batch 2016. Currently he is waiting for his mini thesis examination process as one of the requirements for obtaining his bachelor's degree. He chose the concentration of finance and banking as a field of interest in his course.

Rasyimah is a lecture of English at Universitas Malikussaleh, Indonesia. She began her teaching career at the university since 2002 and became interested in language testing after actively being involved in managing the university's Language Center in 2004. During her career, she focuses on teaching English for specific purposes in particular for economics and social sciences university students. For her research interest, she mainly concentrates on curriculum development, language testing and assessment and language acquisition. Currently, she is involved in designing the latest curriculum for economic students in the university. In addition, she has also developed her expertise by providing English training for job seekers specifically for administrative assistants.

Ghazali Syamni was born in 1973, is a lecturer at the Management Department of the Faculty of Economics and Business, Malikusaleh University, Lhokseumawe-Aceh Indonesia. He completed his bachelor's degree in Management from the Faculty of Economics and Business Universitas Malikussaleh in 2002, then completed a Master of Science in finance at the Faculty of Economics and Business, Universitas Gadjah Mada in 2008. Since 2015 he is registered as a student at Doctor of Management Science Program at the Faculty of Economics and Business, Universitas Syiah Kuala, Banda Aceh. In recent years he has been actively conducting research both funded by the Indonesian Ministry of Education and Culture and internal research from the university. In addition, he is also active in publications in several international and national journals as well as publications in international and national proceedings.

Wardhiah is a lecturer at the Department of Economics, Faculty of Economics and Business, Makukussaleh University, Lhokseumawe, Indonesia. She is currently pursuing a doctorate in management science at the Syiah Kuala University. She teaches courses in corporate budgeting, banks and other financial institutions, and financial management. Her research interests include corporate financial management and corporate financial management policies.

Hakim Mustakim is a senior lecturer at the Department of the Economics Development Faculty of Economics, Universitas Almuslim. His Research areas are Economics (Microeconomics, Macroeconomics, Industry Economics and International Economics), Finance Economics, Tourism Economics, Asset management and Property Appraisal, and Micro and medium enterprises Entrepreneurship.

Jumadil Saputra is a PhD holder and works as a senior lecturer in the Department of Economics, Faculty of Business, Economics, and Social Development, Universiti Malaysia Terengganu, Malaysia. He has published 125 articles Scopus/ WoS indexed. As a lecturer, he has invited as a speaker in numerous universities, the examiner (internal and external), the reviewer for article journal and proceeding, the conference committee, journal editorial board, and others. He is a professional member of the International Business Information Management Association (IBIMA), Ocean Expert: A Directory of Marine and Freshwater Professional, and Academy for Global Business Advancement (AGBA). His research areas are Quantitative Economics (Microeconomics, Macroeconomics, and Economic Development), Econometrics (Theory, Analysis, and Applied), Islamic Banking and Finance, Risk and Insurance,

Takaful, i.e., financial economics (Islamic), mathematics and modelling of finance (Actuarial). His full profile can be accessed from https://jumadilsaputra.wordpress.com/home-2/.