

The Effect of Financial Ratios and Firm Size Toward Stock Price of Consumer Goods Industry Listed in the IDX

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ABSTRACT

This study aims to find out the effects of financial ratios and firm size toward the stock price for the consumer goods industry both partially and simultaneously with valuation ratio as a moderating variable as well as to find out the most significant independent variable. The independent variables are proxied by PBV, EPS, DER, SIZE, NPM, and lastly ROA. PER is a proxy of the valuation ratio as a moderating variable and stock price as a dependent variable. This research implements both multiple and moderated regression analysis. The population used in this research is the consumer goods industries with seven companies fulfilling the purposive sampling criteria and using quarterly data within the years 2015 to 2019. Therefore, there are 140 data observations. The results of the research reveal that only PBV does not have a statistically significant effect on the stock price. The variation of the independent variables can explain the 64.02% variation of the stock price. PER as a moderating variable can strengthen the EPS variable to influence the stock price. Among those independent variables, EPS is the most significant variable in its effect on the stock price.

Keywords: Stock price, financial ratios, firm size, price to earnings ratio

Introduction

Currently, stock investment became favored by investors. The capital market brings together an investor and the companies through long-term investments such as stocks. The capital market is the instrument for mobilizing stocks while professionalizing the business (Wijaya, 2017). Indonesia Stock Exchange is the biggest and best-known stock market in Indonesia. In November 2015, IDX launched a campaign called *Yuk Nabung Saham* intending to attract public interest and increase awareness in investing in the capital market, either through stocks or mutual funds (Adiguna, 2018).

The *Yuk Nabung Saham* campaign activity has gradually produced positive achievements. This refers to several achievements recorded throughout its history. Starting from the Jakarta Stock Exchange Composite Index which reached the highest level on 19 February 2018, which is 6,689.29 (Aldin, 2019). This data is in line with the IDX Statistic 2018 report. Then, continue with an increase in the number of stock investors by 30% that makes the total number of investors reach 1.1 million investors (IDX, 2019).

Indonesia is crowned as the largest capital market in Southeast Asia and successfully defeated Thailand with a market value of \$529 Billion supported by the Jakarta Stock Exchange Composite Index which increased 5.5% (Miller & Nguyen, 2020). Provides evidence that the level of stock market transactions in Indonesia is increasing and stock investment activities continue to develop rapidly.

The capital market investment decisions cannot be isolated from the performance of the company (Wijaya, 2017). In general, investors would pick the companies with strong financial accomplishments and able to offer attractive returns such as dividends and capital gains. The

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stock price is one of the indicators of company management to show the value of a company's performance (Sunardi & Permana, 2019).

Investors need to understand the performance of the company by doing some analysis. The common analysis is being used by the investors is the fundamental and technical analysis. Fundamental analysis is done by analyzing the financial ratios that have been described in the financial statement. Three types of financial ratios being used which are, valuation ratio, profitability ratio, and leverage ratio.

In this study, the valuation ratio is proxied by PBV. Several previous types of research stated that PBV influences the stock price positively, for instance, the research wrote by Permatasari et al. (2020). Profitability is characterized as a condition that generates financial benefit or profit by exchanging potential risks (Aryati & Purwanto, 2019). In this analysis, the profitability ratios are proxied by EPS, NPM, and ROA. The previous research by Asmirantho and Somantri (2017), Martiani (2018), and Herawati and Putra (2018) found that EPS, NPM, and ROA influence stock price positively.

Lastly is the leverage ratio that proxied by the DER. Based on the previous research by Tamba et al. (2019), DER influences stock price positively. In addition to financial ratios, the firm size also uses as the independent variable. The greater the SIZE of the company, the more likely an investor to invest in that stock (Purwanto & Agustin, 2017).

According to the results of previous research, reveal that the financial ratios of PBV, EPS, DER, SIZE, NPM, and ROA affect the stock price. Therefore, the researchers selected these financial ratios and firm size as independent variables of this study. However, not all previous research had results that stated those independent variables had a positive effect on stock prices. As found by Ariyani et al. (2018), DER has influence stock price negatively, while Marzuki and Akhyar (2019) found that DER did not influence the stock price.

According to Yuliawati and Darmawan (2019), incoherence in the findings of studies can be resolved using moderating variables; the moderating variables can enhance or weaken the effect of the independent variables toward the dependent variable. PER is adopted as a moderating variable in this study. This research refers to previous research by Rahmat and Nurfadillah (2019), who reported that PER could moderate the influence of DER on the stock price.

The industrial sector that they will choose as an investment place because it can be useful to provide an overview to investors in determining stock choices. Based on Figure 1, there are many sectors listed on IDX, the consumer goods industry is one of them. Based on the IDX 4th Quarter Statistics 2019, this sector is further divided into food and beverages, tobacco manufacturers, pharmaceuticals, cosmetics and households, last houseware.

However, in Figure 1 the stock price of the consumer goods industry is the lowest stock price index. The decline in the growth rate of the share price index for the consumer goods industry occurred due to fluctuations in the stock prices of companies that are members of the consumer goods industry. A decline in share prices or negative growth in share prices is an indication of declining company performance (Widodo & Dewi, 2015).

Although it is a sector that has the lowest stock price index among others, the food and beverage industry which is part of the consumer goods industry grew by 7.99% in 2019 and contributed significantly to an increase in the investment value of \$323 million and IDR12.3 trillion in the second half of 2019, based on the publication from the Ministry of Trade Affairs of Indonesia (2019).



Figure 1. Jakarta composite index and sectoral indices movement (Source: IDX 4th Quarter Statistic (2019))

In addition to analyzing the stock price, an investor must monitor the imbalances in stock prices for the consumer goods industry and the results of previous research in the consumer goods industries attracted the researchers to examine the effect of financial ratio and firm size on the stock price by using the independent variables such as PBV, EPS, DER, SIZE, NPM, and ROA. Also, one moderating variable, namely PER is used.

Literature Review

Stock price

Stock Price is the price that exists in the market and is decided by the activity of the investors who decide to buy or sell the stock (Lawless, 2010).

Stock price analysis

To analyze the stock price, there are two kinds of analyses that are usually used by investors. The first is fundamental analysis, which uses the current and past financial performance of the company to assess the intrinsic value or to analyze the future prediction (Ariyani et al., 2018). The second is technical analysis, which is an empirical approach using company data or records and looking at the results of market demand and stock offerings given to estimate stock prices.

Definition of a proxy variable

Price to Book Value, the ratio that useful tool to help investors value a company, compared to the market per share with the book value per share (Rist & Pizzica, 2014). Earnings Per Share, the ratio that shows the profit earned for each share to be distributed to shareholders over a given period (Gibson, 2011). Debt to-Equity Ratio, the ratio between total liabilities to total equity of the company, this ratio is used to the health of the company (Rist & Pizzica, 2014). Firm Size refers to the size of a company based on its assets (Gibson, 2011). Net Profit Margin means the ratio calculated from the comparison between operating profit and sales (Brigham & Houston, 2012). Return on Assets measures management efficiency in profit generation through available assets (Gitman & Zutter, 2015). Price to Earnings Ratio, the ratio which shows the comparison between market price per share and earning per share based on the financial statements information of the company (Subramanyam & Wild, 2009).

Hypothesis

Ha¹: PBV has a significant effect on the stock price for the consumer goods industry partially.

Ha²: EPS has a significant effect on the stock price for the consumer goods industry partially.

Ha³: DER has a significant effect on the stock price for the consumer goods industry partially.

Ha⁴: SIZE has a significant effect on the stock price for the consumer goods industry partially.

Ha⁵: NPM has a significant effect on the stock price for the consumer goods industry partially.

Ha⁶: ROA has a significant effect on the stock price for the consumer goods industry partially.

Ha⁷: PBV, EPS, DER, SIZE, NPM, and ROA simultaneously have a significant effect on the stock price for the consumer goods industry.

Ha⁸: PER could moderate the effect of EPS on the stock price for the consumer goods industry.

Ha⁹: PER could moderate the effect of DER on the stock price for the consumer goods industry.

Material and Methods*Research strategy*

This study is conducted by using the quantitative approach in collecting and analyzing selected variables that observing around stock prices in the customer goods industry.

Measurement

As the dependent variable in this study is the stock price. Thus, the stock price is measured by the closing price in each quarter. For the independent variable (PBV, EPS, DER, SIZE, NPM, and ROA) also PER as the moderating variable is measured based on the ratio.

Population and sample

IDX 4th Quarter Statistics 2019, totally there are 55 companies. In the customer goods industry, 7 (seven) of the 55 companies are chosen as the samples: PT. Gudang Garam Tbk. (GGRM), PT. H.M. Sampoerna Tbk. (HMSP), PT. Indofood CBP Sukses Makmur Tbk. (ICBP), PT. Indofood Sukses Makmur Tbk. (INDF) PT. Kalbe Farma Tbk. (KLBF), PT. Industri Jamu dan Farmasi Sido Tbk. (SIDO), and PT. Mandom Indonesia Tbk. (TCID).

Sampling Method

IDX 4th Quarter Statistics 2019, totally there are 55 companies. In the customer goods industry, 7 (seven) of the 55. The research samples in this study are determined based on non-probability sampling design or purposive sampling with the criteria for selecting samples in this research is as follows:

1. Consumer goods industry that has been go-public and listed in IDX.
2. Consumer goods industry that has been published their quarter financial statement consistency in their company's official website, or IDX with year period 2015Q1 to 2019Q4.
3. The consumer goods industry has been announced its shares in IDX.

Data collection

Secondary data are used in this research, which are data that are not given directly to the researcher. The data were collected from officially published data by IDX and the company's official website such as quarterly financial statements with the period year in 2015Q1-2019Q4.

Data analysis

This study uses panel data, which is a combination of time series and cross-section data. The analysis method used in this research is panel data regression model and moderated regression analysis. The formulation of the models are as follows:

Equation 1 Multiple Regression

$$\gamma = c + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + e$$

Equation 2 Moderated Regression

$$\gamma = c_1 + \beta_1 X_1 + \beta_4 Z + \beta_6 X_1 Z + e_1$$

$$\gamma = c_2 + \beta_2 X_2 + \beta_3 Z + \beta_7 X_2 Z + e_2$$

Results and Discussion**Data analysis**

Here is the result of the descriptive statistics for the variables:

Table 1. Descriptive Statistics of Independent and dependent variables

	Mean	Median	Maximum	Minimum	Std. Dev.	Obs.
SP	8.7891	8.9634	11.4511	6.1570	1.4887	140
PBV	5.1253	3.6337	38.2874	1.0537	5.0098	140
EPS	594.1275	158.0000	5655.0000	7.9000	997.4742	140
DER	47.4626	42.1611	262.9820	5.5718	34.8048	140
SIZE	20.7143	17.9668	30.6399	14.8032	5.6301	140
NPM	12.6516	11.4470	95.2435	0.9465	9.2912	140
ROA	9.6054	7.3300	30.0229	1.1133	6.8401	140
PER	62.7985	38.6669	722.5000	5.8746	88.3117	140

Source: Proceed data by EViews 10 (2020)

Based on Table 1 above, EPS and PER data are fluctuated because the standard deviation is higher than the mean. EPS fluctuates due to the difference in the increase in net income in each period. EPS will increase if the percentage increase in net income is greater than the percentage increase in the number of ordinary shares outstanding, and vice versa. Based on the condition of the consumer good industry, factors such as ROE, which shows the amount of profit the company generates with the money invested, are one of the reasons for fluctuations in the price-earnings ratio. Also fluctuating PER conditions in line with earnings per share, which is one of the measurement factors for PER.

Table 2. Multiple regression results

Variable	Coefficient	Std. Error	t-Statistics	Prob.
C	7.4798	0.4422	16.912	0.0000
PBV	0.0309	0.0205	1.5073	0.1341
EPS	0.0009	8.3405	11.707	0.0000*
DER	0.0133	0.0028	4.7058	0.0000*
SIZE	0.0265	0.0148	1.7848	0.0766***
NPM	-0.0185	0.0090	-2.0452	0.0428**
ROA	-0.0393	0.0153	-2.5722	0.0112**
R-squared		0.6557	F-statistic	42.2314
Adjusted R-squared		0.6402	Prob (F-statistic)	0.0000
Durbin-Watson stat		0.8768		

Note: * = $p < 0.01$; ** = $p < 0.05$; *** = $p < 0.1$; Source: Proceed data by EViews 10 (2020)

The random effect model is used as the regression model analysis in this study. The result of the classical assumption test of this model, which are:

1. A normality test: the probability value of Jarque-Bera is 0.5885 higher than the mean $\alpha = 0.05$ or 5%. The model is normally distributed.
2. Heteroscedasticity test: the regression model demonstrates "White-Hinkley (HC1) heteroscedasticity consistent standard errors and covariance". It means that the heteroscedasticity problem is not present in this model.
3. Autocorrelation test: the result is 0.8768 which is between -2 and +2. It shows there is no autocorrelation in this regression model.
4. Multicollinearity test: there is no correlation between independent variables above 0.7 means that the multicollinearity test is passed. All variables have VIF values less than 10, with the highest value is 1.7846 from ROA and the lowest value is 1.1257 from EPS.

Interpretation of results

PBV has a positive insignificant influence on the stock price of the consumer goods industry. This indicates that the variation of the PBV is not influenced the stock price movement. If PBV shows an increasing result, investors believe in the growth of a company (Permatasari et al., 2020). This will attract investors to invest in the company and indirectly cause an increase in stock prices. The findings of this analysis are not in line with a previous study carried out by Ariyani et al. (2018) and Permatasari et al. (2020) which has shown that PBV has a significant influence on stock price positively.

EPS has a positive significant influence on the stock price of the consumer goods industry. The higher the EPS value certainly satisfies investors because it indicates the greater profit provided to investors and the company is in good condition (Widodo & Dewi, 2015). Thus, encourages investors to invest in the company, so that the company's stock price will increase. Based on the t-statistics EPS becomes the most influential variable. The result of this test is consistent with previous studies by Asmirantho and Somantri (2017), Ariyani et al (2018), Widodo and Dewi (2015), and Permatasari et al (2020). On the other hand, it contrasts with the study by Wulandari (2020) that found EPS was not significantly affecting the stock price.

DER has a positive significant influence on the stock price of the consumer goods industry. This result is supported by the previous study of Murniati (2016) which stated the higher the DER means that more companies are using the creditor's resources to make a profit. According to Martiani (2018), a small proportion of investors view that a growing company will require a lot of operating funds that cannot be fulfilled from their capital and will require funds from third parties or creditors. Therefore, some investors will buy stocks that have a high DER because the company is in its infancy, and it will

affect the stock price. The finding of this test is consistent with earlier studies by Tamba et al (2019), Martiani (2018), Murniati (2016), and Welan et al. (2019) which found that DER has a significant influence on the stock price positively. Despite this, Ariyani et al (2018) found that DER has a significant influence on the stock price negatively, while Marzuki and Akhyar (2019) also Rahmat and Nurfadillah (2019) said that DER has no significant influence on the stock price.

SIZE has a positive significant influence on the stock price of the consumer goods industry. The high SIZE indicates that the company has high collateral so that the risk of bankruptcy is reduced (Welan et al., 2019). This makes investors interested in buying company shares so that the demand for shares increases and share prices rise. This result is supported by the previous research from Tamba et al (2019), Murniati (2016), Marzuki and Akhyar (2019), and Welan et al. (2019) that said SIZE has a significant influence on stock price positively.

Table 3. PER moderate the influence of EPS and DER regression result

	Significance Level			Adjusted R Square		
	Without PER	With PER	Note	Without PER	With PER	Note
1. EPS	0.0000	0.051	↑	0.0009	0.689	↑
2. DER	0.0000	0.000	-	0.0133	0.241	↑

Source: Proceed data by EViews 10 and SPSS 23 (2020)

PER can moderate and strengthen the influence of EPS on the stock price significantly. This indicates that an increase in the PER value could make the influence of EPS on stock prices stronger and investors should be able to see and analyze the value of PER and EPS, before deciding to buy shares in a consumer goods industry company. This result opposes Rahmat and Nurfadillah (2019) who found that PER has not able to moderate EPS.

PER could not moderate and strengthened the influence of DER on-stock price. This indicates that an increase in the PER value did not influence the effect of DER on-stock price. This result has contrast with Rahmat and Nurfadillah (2019) who found that PER has able to moderate DER.

Conclusion

The conclusions of the research are listed below:

1. The effect of the partial independent variables can be derived partly from the t-test results as revealed only PBV that has no significant effect on the stock price for the consumer good industry. PBV, EPS, DER, SIZE, NPM, and ROA, are simultaneously influence the stock price. At the same time, the variation of the independent variables can explain by up to 64.02% of the variation of the stock price.
2. PER as a moderating variable, could moderate and strengthen the influence of EPS on the stock price.
3. After the independent variables being sorted based on their t-statistics, EPS is considered as the most influential variable.

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