The Influence of Fundamental Analysis on Stock Prices: The Case of Food and Beverage Industries

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Abstract:

The objective of this study is to determine the effect of fundamental factors, like Debt to Equity Ratio (DER), Return on Assets (ROA), Current Ratio (CR), Price Earnings Ratio (PER), and Total Assets Turnover (TATO), towards stock prices.

The object of this research is the food and beverage industries listed on the Indonesia Stock Exchange in the period 2012 - 2015. The study used secondary data obtained from the Indonesia Stock Exchange website (www.idx.co.id). The research design used is causal research methods and the sampling technique used is purposive sampling method.

There were 11 out of 17 companies that met the criteria during the four-year observation period. The data was analyzed by panel data regression analysis technique using three approaches - Common Effect, Fixed Effect, and Random Effect. Chow test model, Hausman test, and Lagrange Multiplier test were used for the model selection using F test and t-statistical tesst.

The result of the study through the use of F tests indicated that the increase or decrease of stock prices are affected by ROA, CR, DER, TATO and PER. The result of the t-statistic test showed that ROA and TATO have a partial influence on the share price, whereas the DER, CR and PER variables have no affect on the stock price of food and beverage companies.

Keywords: Debt to Equity Ratio (DER), Return on Assets (ROA), Current Ratio (CR), Price Earnings Ratio (PER), Total Assets Turnover (TATO), and Stock Prices.

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1. Introduction

Strategy determination and competitiveness stabilization in an economic sector continues to be developed, especially in non-oil and gas manufacturing industry. One of the most rapidly growing industrial sub-sectors is the Food and Beverage Industry. The data released by the Ministry of Industry in the Performance Report of 2015 shows that the growth of Food and Beverage Industry from the year of 2012 to 2015 had a good performance compared to the other non-oil and gas manufacturing industries. The Food and Beverage Industry makes the highest Contribution to the Gross Domestic Product (GDP), with a percentage of 5.61%. In the investment value of Domestic Investment it shows that the Food and Beverage Industry has the highest value of Rp 24.53 trillion (LKKPT, 2015). The capital market has an important role in the food and beverage industry. It has an economic function providing facilities to correlate the two interests, those who have excess funds (investors) and those who need the funds (issuer). The securities commonly traded in the capital markets can be either stocks or bonds (Tandelilin, 2010).

Investors should fully understand that when investing in the capital market, one can make a profit but one can also lose. There is no guarantee that they will maintain their capital because they can also experience capital loss. Therefore, they should be more careful in determining which shares will be selected. In order to determine which shares are more profitable in the present and in the future, they have to conduct a stock valuation.

In general, there are two analyses to determine the value of shares - fundamental security analysis and technical analysis (Hartono, 2007). Investors should analyze change in share prices more deeply by performing fundamental analysis based on financial ratios. Fundamental analysis is predicting stock prices in the future and estimating the value of fundamental factors that influence future stock prices, hence the share price estimation can be obtained (Husnan, 2009; Thalassinos *et al.,* 2012; 2023). Fundamental information is information related to the company condition in general, shown in financial statements which indicate company performance. These financial statements can show some fundamental information such as financial ratios, cash flow, and other performance measures associated with stock prices.

There are five types of financial ratios, Profitability Ratio, Liquidity Ratio, Leverage Ratio, Activity Ratio and Valuation Ratio (Sutrisno, 2009). This study was conducted to determine the influence of fundamental factor variables on stock prices. Through the analysis, the effect of fundamental factors on stock prices and the correlation of these factors can be estimated. The objects of this study are food and beverage sub-sector companies listed on the Indonesia Stock Exchange between the period of 2012-2015. This is because the growth of the value of the food and beverage industry was more stable than other industries. Currently the food and beverage industry makes the largest contribution to the Indonesian economy, which is 5.5 percent of the national gross domestic product and 31 percent of the gross

domestic product in non-oil processing industry (Tribune Business, 2016). The study is focused on; Debt to Equity Ratio (DER), Return on Assets (ROA), Current Ratio (CR), Price Earnings Ratio (PER), and Total Asset Turn Over (TATO).

2. Literature Review

Financial ratio is the most commonly used method to analyze financial statements The financial ratio links various estimations in the financial statements, therefore the financial condition and the results of a company's operations can be interpreted. The ratio is a useful guide in evaluating the company's financial position and operations and compare the results from previous years or from other companies (Simamora, 2000). Financial ratio also can be used to determine irregularities in the implementation of the company's operational activities by comparing the financial ratio with that of previous years (Wild *et al.,* 2005).

Profitability Ratio is used to measure the company's effectiveness in obtaining profit. Return on Assets (ROA) measure the company's ability to earn profits by using the total assets owned by the company after adjusting the costs to finance the assets (Hanafi and Halim, 2007). ROA can be mathematically calculated using the formula:

$$\textbf{ROA} = \frac{The\ Net\ Profit\ After\ Tax}{Total\ assets}$$

Liquidity Ratio is used to measure a company's ability to fulfill its short-term liabilities. Current Ratio (CR) measures the ability of current assets to pay current debts. This ratio is calculated by dividing current assets by current liabilities. And it shows how current liabilities are covered by assets that will be converted into cash in the near future. Current assets include cash, tradable securities, receivable accounts, and inventories. Current liabilities consist of payable accounts, short-term receivable notes, long-term debts, taxes and accrued salaries (Brigham and Houston, 2012). The formula for calculating CR is as follows:

$$\textbf{CR} = \frac{Current\ assets}{Current\ liabilities}$$

Leverage Ratio is used to measure the ability of a company's assets to be funded by debt. Debt to Equity Ratio (DER) is the ratio calculated by dividing total debt with total assets. DER is the ratio between total debt to total shareholders' equity of the company. Total debt represents total short-term debt and total long-term debt. Shareholders Equity is total equity (total of paid-up share capital and retained earnings) owned by the company (Brigham and Houston, 2012). DER can be mathematically formulated as follows:

$$\textbf{DER} = \frac{Total\ Debt}{Shareholders\ Equity}$$

Activity Ratio is used to measure the company's effectiveness in utilizing financial resources. The ratio of Total Assets Turnover indicates the effectiveness in the use of all company properties in order to increase the sales or to describe how much Net Sales can be obtained by money that is invested in company property (Sawir, 2005). If the turnaround is slow, it indicates that the assets are too large compared to the ability to sell. Generally, the higher the asset turnover, the more efficient the use of such assets. The calculation formula for TATO is as follows:

$$\textbf{TATO} = \frac{Net\ Sales}{Total\ assets}$$

Valuation Ratio is used to measure a company's ability to create a value to the public (investors) or to the shareholders. This ratio provides information on how much higher the investors can offer to the company than the shares book value. The Price Earnings Ratio (PER) indicates the amount the investor is willing to pay for each reported profit (Brigham and Houston, 2012). A higher PER indicates that the investors are willing to pay a premium share price for the company. The formula for calculating PER is as follows:

$$\textbf{PER} = \frac{Stock\ price}{Earning\ per\ Share}$$

Stock Price is the price of a stock in the stock market at a particular moment, determined by market participants and influenced by the demand and the supply of shares in the capital market (Jogiyanto, 2008).

2.1 Previous Studies

1. The results of previous studies by Dewi and Suaryana (2013) and Daniel (2015) indicate that the effect of DER is negative to stock price, while other studies by Pandansari (2012) they show positive effect. The solvency ratio to stock price, in a study by Safitri (2013,) shows that there is no influence, whereas studies by Tan *et al.* (2014), Sondakh *et al.* (2015) show that there is influence. From the perspective of the ability to pay long-term liabilities, the lower the ratio the better the company's ability to pay long-term liabilities.

2. Results showing the positive ROA effects on stock prices are supported by studies conducted by Pandansari (2012), Dewi and Suaryana (2013), Kohansal *et al.* (2013), Polii *et al.* (2014), Dewi and Hidayat (2014), Daniel (2015), Idawati and Wahyudi (2015), Permana (2017) and Yulsiati (2016). Profitability ratios showing no influence on the stock prices are shown in the results of studies conducted by Meythi *et al.* (2011), Safitri (2013), and Buigut *et al.* (2013). ROA describes the company's ability to get profits from every asset used. By knowing this ratio, the company's efficiency in utilizing its assets in company operations can be assessed (Suryanto *et al.,* 2017).

3. Studies conducted by Meythi *et al.* (2011), Deitiana (2013), Tan *et al.* (2014) show no effect of CR on stock prices, and a study by Daniel (2015) shows a negative effect of CR on stock prices, whereas studies by Kohansal *et al.* (2013) show a positive effect. A low current ratio leads to the decline in the market price of the relevant stock. Conversely, a higher CR does not always indicate a good result, it can also indicate the existence of excess cash or other current assets compared with what is currently needed.

4. Results of previous studies conducted by Safitri (2013), Arslan and Zaman (2014), and Daniel (2015) show a positive and significant PER to stock prices. This ratio indicates the level of investor confidence in the company's future performance. The higher the PER, the more investors believe in the issuer. Therefore, the stock price will be more expensive.

5. In the results of a study conducted by Tan *et al.* (2014), TATO indicates the effect on stock prices. Meanwhile, in a study conducted by Deitiana (2013) this shows no effect on stock prices. The high and low stock prices of an industry can also be caused by the efficiency in the use of all assets in increasing sales. The higher the TATO ratio the more efficient the use of all assets in increasing sales.

3. Study Framework

The conceptual framework of this study can be seen in the following Figure 1:

Figure 1. *Conceptual Framework*
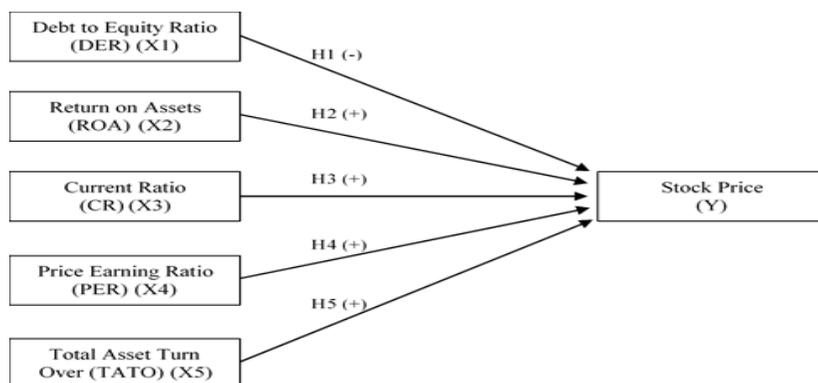
4. Methodology

The method used in this study is causal research. It is a research to determine the influence of one or more independent variables to the dependent variable. The independent variables in this study consist of DER (x1), ROA (x2), CR (x3), PER (x4), and TATO (x5). Whereas the dependent variable is the Stock Price (Y) the

purpose of this causal research is to examine the hypothesis of an independent variable to the dependent variable in which the collected data will be tested. Causal research requires hypothesis examination with parametric statistical tests with panel data regression analysis. The population of this study are all food and beverage companies listed in the Indonesia Stock Exchange. There were 17 (seventeen) companies from 2012 until 2015. Sampling is conducted by using purposive sampling method, the sample is selected according to certain criteria, and there were 11 companies that met the criteria of data availability. The data used in this study is secondary data including financial statements, and summary of the recorded performance of the company. The data was obtained from the Indonesia Stock Exchange (www.idx.co.id). Data analysis is grouping the data based on variables and types of respondents, tabulating the data based on variables from all respondents, presenting the data of all variables, solving the problems, and examining the hypothesis (Sugiyono, 2012). Descriptive statistics provide an overview of the data by the mean, standard deviation, variant, maximum, minimum, sum, range, kurtosis, and skewness (Ghozali, 2009). The stationarity test determines the time series data used in this study. It is necessary to avoid spurious regression if regression performed on the data time series is not stationary.

Chow test is used to determine the model of regression panel data with Common Effect method or Fixed Effect method. Hausman test is a statistical test to choose a Fixed Effect or Random Effect model that is more appropriate to use. From the previous Chow Test results it was determined that the Fixed Effect method is to be used. Lagrange Multiplier (LM) is a test to see the most appropriate model to use between the Random Effect Model or Common Effect Models (OLS). The coefficient of determination aims to measure the ability of independent variables (ROA, CR, DER, TATO, and PER) in explaining the dependent variable (Stock Price).

4.1   Panel Data Regression Model Test (F Test)

This test is used to determine the accuracy of the regression models used, that the stock price is affected by the DER, ROA, the CR, PER, and TATO. The significance level used is 5% or 0.05. Hypothesis: H0 is accepted if the significance probability level of F> α = 0.05 and H0 is rejected if the significance probability level F <α = 0.05. Assumption: H0 is accepted, this indicates the independent variable has no significant relations with the dependent variable and if H0 is rejected, then it shows that the independent variable has a significant relation with the dependent variable.

4.2   Panel Data Regression Coefficient (t Test)

The t test is used to examine the relationship between the dependent variable, firm value, with each independent variable in this research, DER, ROA, PER, CR, and TATO at 5% significance level (0,05). Hypothesis used in this study by using partial t test and the hypothesis as follows:

H1: It is assumed that the Debt to Equity Ratio (DER) variable has a negative effect on the stock price of food and beverage companies listed in Indonesia Stock Exchange period 2012-2015.

H2: Suspected variable Return on Assets (ROA) has a positive effect on stock prices of food and beverage companies listed on the Indonesia Stock Exchange period 2012-2015.

H3: Suspected variable Current Ratio (CR) has a positive effect on stock prices of food and beverage companies listed on the Indonesia Stock Exchange period 2012-2015.

H4: It is assumed that Price Earnings Ratio (PER) variable has a positive effect on the stock price of food and beverage company listed on the Indonesia Stock Exchange period 2012 - 2015.

H5: It is assumed that the Total Assets Turnover (TATO) variable has a positive effect on the stock price of food and beverage companies listed on the Indonesia Stock Exchange for the period of 2012 - 2015.

5. Results and Discussion

Stationary test DER: The results of the stationary test DER has a smaller probability value of α (5%), 0.0000 <0.05, then H0 is rejected. This shows that the stationary DER variable is at the 1st difference level and is not exposed to the roots of the unit.
Stationary Test ROA: The result of stationary test of ROA has smaller probability value than α (5%), 0,0086 <0,05, then H0 is rejected. This indicates that the variable is stationary or not exposed to the root of the unit.
Stationary Test CR: The result of stationary test CR has a probability value smaller than α (5%), 0.0331 <0.05, then H0 is rejected. This indicates that the variable is stationary or is not exposed to the roots of the unit.
Stationary Test PER: The result of the stationary test PER has a smaller probability value of α (5%), 0.0000 <0.05, then H0 is rejected. This indicates that the variable is stationary or not exposed to the roots of the unit.
Stationary test TATO: The result of the stationary TATO has a smaller probability value of α (5%), 0.0085 <0.05, then H0 is rejected. This indicates that the variable is stationary or not exposed to the roots of the unit.
Stationary test Stock Prices: The result of the stationary test Stock Prices have a smaller probability value of α (5%), 0.0033 <0.05, then H0 is rejected. This indicates that the variable is stationary or not exposed to the roots of the unit.
Chow Test: The result of Chow test shows a smaller cross section probability value of α (5%), 0.0000 <0.05, then H0 is rejected. This means the common effect model is not a suitable method, and the method suitable for that model is the fixed effect model. Because in the Chow test results H0 is rejected, then the test is continued to the Hausman test, to determine the best model among Fixed Effect or Random Effect.

Hausman Test: The result of the Hausman test shows a larger cross section probability value of α (5%), 0.4885 >0,05, therefore H0 is accepted. This means that Random Effect is the right model. Since the Hausman results indicates the use of the Random Effect Model, it is necessary to test the LM as the final step to determine the most appropriate model between Common Effect or Random Effect.

Lagrange Multiplier Test (LM-Test): The result of the LM test shows a smaller cross section probability value of α (5%), 0.0000 <0.05, then H0 is rejected. This means the most appropriate estimation to be used in panel data regression is the Random Effect Model method.

Coefficient of Determination (R^2): Based on the data as shown by using E-views, the influence of independent variables to the dependent variable on the stock price is known from the value of Adjusted R-Squared which is equal to 0.238092 or 23.8092%. This means that 23.8092% of the stock price fluctuations can be explained by the variation of all independent variables, including DER, ROA, CR, PER, and TATO. While the rest of 76.1908% is explained by other causes apart from the independent variables.

Testing Panel Data Regression Model (F Test): Based on test results using the Random Effect model, independent variables have a simultaneous influence on the dependent variable. This can be proven from the probability value of F-statistics, 0.008098 is smaller than α (5%), then H0 is rejected and H1 is accepted. Thus, the regression model can be used to predict stock prices, or it can be said that the increase or decrease in stock prices is influenced by DER, ROA, CR, PER, and TATO.

5.1 Testing Panel Data Regression Coefficient (*t*-Test)

The Effect of DER Towards Stock Prices: The probability value of DER is higher than the value of α 0.05 (0.6048> 0.05). Therefore, H0 is accepted and it can be concluded that to a certain extent DER does not have a negative affect on Stock Price. This result contradicts the study by Dewi and Suaryana (2013), Daniel (2015), Pandansari (2012), Tan *et al.* (2014), Sondakh *et al.* (2015), stating that DER influences Stock Price. But this study supports Safitri's (2013) research saying that the solvency ratio has no effect on stock prices. DER is the ratio calculated by dividing total debt by total assets. From the perspective of the ability to pay long-term liabilities, the lower the ratio the better the company's ability to pay long-term liabilities.

The Effect of ROA Towards Stock Prices: The probability value of ROA is lower than α 0,05 (0.0001 <0,05). Therefore, H0 is rejected and it can be concluded that to a certain extent ROA has a positive effect on Stock Price. This study supports the research conducted by Pandansari (2012), Dewi and Suaryana (2013), Kohansal *et al.* (2013), Polii *et al.* (2014), Dewi and Hidayat (2014), Daniel (2015), Idawati and Wahyudi (2015), and Yulsiati (2016), that state that ROA shows a positive influence on stock prices. Meanwhile, this result does not support the research by Meythi *et al.* (2011), Safitri (2013), and Buigut *et al.* (2013), that state that profitability ratios have no effect on stock prices. ROA describes the company's ability to gain more

profit from every asset used. From the results of this study we can conclude that the corresponding company has been effectively utilizing its assets for operational activities and earn profits for the company.

The Effect of CR Towards Stock Prices: CR probability value is higher than α value 0.05 (0.8678> 0.05). Therefore, H0 is accepted and it can be concluded that to a certain extent CR does not have a positive effect on Stock Price. This result is supported by research conducted by Meythi *et al.* (2011), Deitiana (2013), Tan *et al.* (2014) that state that CR has no effect on stock prices. Instead, it is contrary to the results of a study by Daniel (2015) that shows the negative effect, and which shows a positive effect in the research by Kohansal *et al.* (2013). A low current ratio can lead to a decline in market prices of stocks. Conversely, a high current ratio is not always positive, it indicates the presence of excess cash or other current assets than what is needed now.

The Effect of PER Towards Stock Prices: The probability value of PER is higher than the value of α 0.05 (0.7034> 0.05). Therefore, H0 is accepted and it can be concluded that to a certain extent PER has no positive effect on Stock Price. This study shows different results from previous research conducted by Safitri (2013), Arslan and Zaman (2014), and Daniel (2015) who state a positive and significant PER against stock prices.

The Effect of TATO Towards Stock Prices: The probability value of TATO is lower than α 0,05 (0.0001 <0,05). Therefore, H0 is rejected and it can be concluded that to a certain extent TATO has a positive effect on Stock Price. This research is supported by previous research conducted by Tan *et al.* (2014), that the TATO shows a positive effect on stock prices. On the contrary, this result is contrary to other research conducted by Deitiana (2013), that shows there is no effect on stock prices. The high or low stock price of an industry can be caused by the efficiency in using all assets to increase the sales. The higher the TATO ratio, the more efficient the use of all assets in increasing sales.

6. Conclusions and Recommendations

According to the results of the analysis, it can be concluded that the DER variable does not have a negative effect on stock price. The regression coefficient analysis of panel data shows the probability value of DER is 0.6048, which is higher than 0.05. The ROA variable has a positive effect on stock price, with probability value 0.0001. CR variable has no effect on stock price, with probability value 0.8678. The variable PER does not affect the stock price, the probability value of PER is 0.7034. TATO variable has a positive effect on stock price, PER probability value is 0.0001. The result of this study shows that the influence of ROA, CR, DER, TATO and PER on the stock prices of food and beverage companies listed in Indonesian Stock Exchange (BEI) for the period of 2012-2015 is significant and positive. The effect of the stock price is explained by the independent variables with a percentage of 23,8092% while the other 76.1908% can be explained by other factors non included in the research model.

The company is expected to optimize the transactions that may cause the changes in CR by increasing current assets or reducing current debt. Therefore, there will be changes in the level of the company's liquidity, and affects its stock prices. The company should also maintain and use the capital structure or operational profit more efficiently because it is expected to get positive effect on the stock price ratio. With the increase in profits, it will also increase the stock price, and the expected PER will also rise. For investors, although DER, CR, and PER have no effect on stock prices, there are still many variables on financial ratio that can be used as sources of information to make investment decisions. And for the next study, it is recommended to examine the other ratios as stock price measurements and increase the number of company samples and research period, therefore the results of the study can be more advantageous.

References:

Arslan, M., Zaman, R. 2014. Impact of Dividend Yield and Price Earnings Ratio on Stock Returns: A Study Non-Financial Listed Firms of Pakistan. Research Journal of Finance and Accounting 5(19), 68-74.

Brigham, E.F., Houston, J.F. 2012. Fundamentals of Financial Management, 11th Edition, Book One. Translation: Ali Akbar Yulianto. Jakarta, SalembaEmpat.

Buigut, K., Soi, N., Koskei, I., Kibet, J. 2013. The Effect of Capital Structure on Share Price on Listed Firms in Kenya. A Case of Energy Listed Firms. European Journal of Business and Management, 5(9), 29-34.

Daniel, H. 2015. The Effect of Internal Factors on Stock Price of The Company LQ 45 Listed on the Indonesian Stock Exchange (IDX). EMBA Journals, 3(3), 863-876.

Deitiana, T. 2013. Influence of Current Ratio, Return on Equity and Total Asset Turn Over against Dividend Payout Ratio and Implication on Stock Price Company LQ 45. Journal of Business and Accounting, 15(1), 82-88.

Dewi, P.D.A., Suaryana, I.G.N.A. 2013. Effect of EPS, DER, and PBV on Share Price. E-Journal of Accounting Udayana University, 4(1), 215-229.

Dewi, S.P., Hidayat, R. 2014. Effect of Net Profit Margin and Return On Assets on Stock Prices on Automotive Companies Listed In Indonesia Stock Exchange. ILMAN 1(1), 1-10.

Gujarati, D.N., Porter, D.C. 2012. Basic Econometrics, 5th Edition, Second Book. Translation: Raden Carlos Mangunsong. Jakarta, SalembaEmpat.

Hanafi, M.M., Halim, A. 2007. Financial Statement Analysis, 3rd Edition. Yogyakarta, UPP STIM. YPKN.

Idawati, W., Wahyudi, A. 2015. Effect of Earning Per Shares (EPS) and Return on Assets (ROA) against Share Price on Coal Mining Company Listed in Indonesia Stock Exchange. Journal of Resources Development and Management, 7, 79-91.

Jogiyanto, J. 2008. Research Methods in Information Systems Research. Yogyakarta, Andi Offset.

Kohansal, M.R., Dadrasmoghaddam, A., Karmozdi, K.M., Mohseni, A. 2013. Relationship between Financial Ratios and Stock Prices for the Food Industry Firms in Stock Exchange of Iran. World Applied Programming, 3(10), 512-521.

Meythi, E.T.K., Rusli, L. 2011. The Influence of Liquidity and Profitability on Stock Price of Manufacturing Companies Listed on Indonesia Stock Exchange. Journal of Business Management and Economics, 10(2), 2671-2684.

Pandansari, F.A. 2012. Analysis of Fundamental Factors Against Stock Price. Accounting Analysis Journal, 1(1), 27-34.

Permana, D. 2017. Toward the Best Model of Strategy Implementation in Indonesian Islamic Banking from the Lens of Strategic Clarity. European Research Studies Journal, 20(4B), 3-15.

Polii, P.J.V., Saerang, I., Mandagie, Y. 2014. The Influence of Financial Ratios on Stock Price in National Private Foreign-Exchange Commercial Bank Listed on Indonesia Stock Exchange. EMBA Journals. 2(2), 993-1004.

Safitri, A.L. 2013. Influence of Earning Per Share, Price Earnings Ratio, Return on Asset, Debt to Equity Ratio and Market Value Added on Stock Price of the Jakarta Islamic Index. Management Analysis Journal, 2(2), 1-8.

Sawir, A. 2005. Financial Performance and Financial Planning Analysis. Jakarta, PT GramediaPustaka Utama.

Sondakh, F., Tommy, P., Mangantar, M. 2015. Current Ratio, Debt to Equity Ratio, Return on Asset, Return on Equity Effect on Stock Prices of LQ 45 Index in BEI Period 2010-2014. EMBA Journals, 3(2), 749-756.

Sugiyono, S. 2012. Business Research Methods (Quantitative Approach, Qualitative, and R&D). Bandung, Alfabeta.

Suryanto, T., Thalassinos, E.J., Thalassinos, I.E. 2017. Board Characteristics, Audit Committee and Audit Quality: The Case of Indonesia. International Journal of Economics & Business Administration, 5(3), 47-57.

Sutrisno, S. 2009. Financial Management, Theory, Concepts and Applications. Yogyakarta, Ekonisia.

Tan, S., Syarif, A., Ariza, D. 2014. Analysis of Factors that Affecting the Stock Price of Industry Transportation Services Which is Listed on The Indonesian Stock Exchange Years of 2009 to 2012. Journal of Management Dynamics, 2(2), 116-129.

Tandelilin, E. 2010. Portfolio and Investment, 7th Edition. Yogyakarta, Kanisius.

Thalassinos, I.E., Hanias, P.M. and Curtis, G.P. 2012. Time series prediction with neural networks for the Athens Stock Exchange indicator. European Research Studies Journal, 15(2), 23-31.

Thalassinos, I.E., Hanias, P.M., Curtis, G.P. and Thalassinos, E.J. 2013. Forecasting financial indices: The Baltic Dry Indices. Marine Navigation and Safety of Sea Transportation: STCW, Maritime Education and Training (MET), Human Resources and Crew Manning, Maritime Policy, Logistics and Economic Matters; Code 97318, 283-290, ISBN: 978-113800104-6.

Tribune Business. 2016. Growth of Food and Beverage Industry Stable throughout 2016. http://www.tribunnews.com/bisnis/2016/07/27/sepanjang-tahun-2016-ini-pertumbuhan-industri-makanan-dan-minuman-stabil.

Wild, J.J., Subramanyam K.R., Halsey, R.F. 2005. Financial Statement Analysis, 8th Edition, Second Book. Translation: Yanivi and Nurwahyu. Jakarta, SalembaEmpat.

Yulsiati, H. 2016. Influence of Earning Per Share, Return on Equity and Debt to Equity Ratio Against Stock Price on Jakarta Islamic Index (JII) Listed in Indonesia Stock Exchange (BEI) Period 2010-2014. Journal of Administration, 2(1), 104-127.