The Relevance of Leverage, Profitability, Market Performance, and Macroeconomic to Stock Price

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Abstract: This research aimed to test and analyze the influence of DER, ROE, PER, Interest Rate, and Currency to stock price. This research used quantitative approach by implementing multiple regression analysis method. The research population is food and beverage companies listed in Indonesian Stock Exchange in the period of 2010-2014 out of which 11 companies were selected as samples to be observed. The result showed that fundamental variables that have positive effect on stock price are ROE and PER. Fundamental variables that have negative effect is DER. Interest rate and exchange rate do not affect stock price.

Keywords: Leverage, profitability, interest rate, exchange rate, stock price.

The main factors that affecting an investor in making an investment activity includes the rate of return on stocks, risk and stock price progress. Stock price considerations form the basis for investors because the stock price reflects the value of the company. Stock price movements can be seen through the movement of the stock price index. Stock price is used by investors as one of the important information before doing an investment activity because it can be used to predict the profit (capital gain) that would be obtained by analysis of the company's financial statements can be made by using the calculation of financial ratios of the company.

The company financial report’s analysis could be done with using financial company ratio calculation. Investor really needs company financial report so that investor can analyzing company financial performance report. This financial performance analysis could be done with using kind of financial ratio which created for helping the investor for evaluating a financial report (Brigham and Houston, 2009). Through financial ratio too, the strong and the weakness of company financial could be known. Technical analysis is an effort for predicting stock price with observing stock price’s change in the past (Halim, 2005). Meanwhile, the fundamental analysis is a stock analysis technique that explain about fundamental financial and economic fact from company as assessment step of company stock value (Halim, 2005). The fundamental analysis uses profit outlook and company dividend, forecasting of interest level in the future, and risk evaluation of company for determine appropriate stock price (Bodie et al., 2006).

This research analyzes the stock price with using financial ratio, the level of interest rate, and exchange rate of American Dollar to Indonesian Rupiah. More detail, financial ratio that used is including
Solvability ratio, profitability, and market ratio. Solvability ratio that used to analyze stock price is represented with debt of equity ratio (DER). This ratio shows the company capability for comply its needs with debt (Sabardi, 1994). Higher the DER, then higher also the risk of a company. This matter caused by most of the fund which obtained from debt. Otherwise, lower the DER value could attract investor for doing investment because it has low risk relatively. Related with DER ratio, Anastasia (2003) suggests that DER doesn’t has impact to stock price. Meanwhile, Dimitriopoulos (2007) suggests that ratio of DER has negative impact to the stock price.

The research gap between this research with another research in the past are stock price and financial ratio. Despite the research with topic of stock price and financial ratio has been done, but this research is different with previous research. Anastasia (2003) uses stock price as dependent variable. Adjasi (2007) uses dependent variable that includes inflation, exchange rates, money supply, interest rates, oil price, gold price, and cocoa price. Dini (2011) in her research suggests that price to earnings ratio (P/E) has negative impact to the stock price. Another research suggests that earning per share, price earnings ratio, dividend pay-out ratio has positive impact to the share price (Sharma, 2011). Meanwhile, Atul (2012) suggests that interest rate and exchange rate variable has significant negative impact to the stock price. Moreover, Anastasia (2003) research shows that DER has no impact to the stock price. Meanwhile, Syafriel (2005) shows that DER has positive impact to the stock price. Not only invention abour DER variable which is different between one research with another, but this inconsistent result also happened to another variable, such as ROE, PER, interest rate, and exchange rate. For example about interest rate Aroni (2011 and Atul (2012) suggests that interest rate has negative impact to the stock price, but in another side, Thobarry (2009) suggests that interest rate has doesn’t impact to the stock price. Therefore, the main aim of this research is testing again the variables which are the result from few research in the past. So, this research should contribute for other researcher who have same topic with this article, and should help companies to decide the stock price.

METHODOLOGY

This research framework is reflected in Figure 1 which shows the effect of DER, ROE, PER, interest rate, and exchange rate to stock price. Stock price which used for this research are the share every company based on closing price at the end of year per December 31th, since 2010 to 2014.

The independent variables which used for this research includes: 1) DER shows the company capability for finance its needs with debt, which mean shows the company financial (Sabardi, 1994). This ratio could be calculated with divide total debt with own capital (Liargovas and Skandalis, 2010), 2) ROE shows the ability from own capital for generate profits for shareholders. ROE could be calculated with divide profit after tax with own capital (Syafriel, 2005); 3) PER is company capability for showing how much the amount of money which spent by investor for paying the mount of profit which reported. This PER could be calculated with divide profit after tax with own capital (Syafriel, 2005); 4) Interest Rate, shows the “price” from use of money or also can be seen as “rent” from use of money for the period of time (Boediono 2005:83). In this research, data of interest rate level is BI rate which has established by Bank of Indonesia at the end of year, and 5) Exchange Rate. This research uses exchange rate of American Dollar to Indonesia Rupiahs with using middle rate.

The complete model of research showed in Figure 1 as follows:
In this research, the measurement of interest rate and exchange rate variable is done indirectly by using interest rate sensitivity and exchange rate which is related to total company asset. This step is done so that each company has different values on the variable interest rates and exchange rates.

This research is an explanatory research (Sekaran, 1992:95) conducted in Indonesia, precisely in Indonesian Stock Exchange (BEI) in 2010-2014. Meanwhile, the population used in this study was food and beverage companies registered continuously during the study period at BEI. Secondary data used in this research is the annual financial report for 2010-2014 period from the official website of BEI and Indonesian Capital Market Directory.

The method of data analysis used is multiple regression analysis with the model as follows:

\[ Y = \alpha_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + e \]

Information:
- \( Y \) = Closing Price
- \( \alpha_0 \) = Constanta
- \( \beta_{1-5} \) = Regression Coefficient
- \( X_1 \) = Debt to Equity Ratio (DER)
- \( X_2 \) = Return On Equity (ROE)
- \( X_3 \) = Price Earnings Ratio (PER)
- \( X_4 \) = Interest Rate
- \( X_5 \) = Exchange Rate
- \( e \) = Residual Error

**RESEARCH RESULT**

Based on the results of statistical description analysis, Table 1 shows the sample characteristics used in this study which include: number of samples (N), maximum value, minimum value, mean of sample, standard deviation, and variant for each variable for 55 observations.

**Table 1. Descriptive Statistics Test Result**

<table>
<thead>
<tr>
<th></th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>SD</th>
<th>Var</th>
<th>Skewness</th>
</tr>
</thead>
<tbody>
<tr>
<td>DER</td>
<td>.20</td>
<td>3.0</td>
<td>1.01</td>
<td>.594</td>
<td>.36</td>
<td>1.1</td>
</tr>
<tr>
<td>ROE</td>
<td>4.0</td>
<td>143</td>
<td>.5</td>
<td>31.0</td>
<td>964</td>
<td>2.7</td>
</tr>
<tr>
<td>PER</td>
<td>2.9</td>
<td>56.</td>
<td>19.6</td>
<td>9.92</td>
<td>98.</td>
<td>.11</td>
</tr>
<tr>
<td>Ln_Interest</td>
<td>10.</td>
<td>16.</td>
<td>12.7</td>
<td>1.60</td>
<td>84.</td>
<td>.64</td>
</tr>
<tr>
<td>Ln_ReturnRate</td>
<td>3</td>
<td>12</td>
<td>6.0</td>
<td>1.60</td>
<td>2.5</td>
<td>.64</td>
</tr>
<tr>
<td>Ln_Exchange</td>
<td>3.0</td>
<td>8.8</td>
<td>5.39</td>
<td>1.60</td>
<td>75.</td>
<td>.64</td>
</tr>
<tr>
<td>Ln_StockPrice</td>
<td>4.9</td>
<td>14.</td>
<td>8.27</td>
<td>2.35</td>
<td>5.5</td>
<td>.82</td>
</tr>
</tbody>
</table>

Source: data processed (2017)

Regarding to Table 1, Debt to Equity Ratio (DER) which ratio between debt with own capital has enough data spread because the deviation standard below means. Generally, it can be said that data spread tends to be on the left or lean to the left as seen from the value of skewness smaller than the mean.

In addition, the Return on Equity (ROE) data which is the ratio of ability to generate profit by using own capital has a poor distribution of data because the value of deviation standard is greater than the average value. In general, the spread of the data tends to be on the left or lean to the left as seen from the value of skewness smaller than the mean.

The standard deviation value of the Price to Earnings Ratio (PER) variable is smaller than the average value, indicating that the data is good with a fairly flat spread. The data distribution tends to be in the left position of the mean.
Based on Table 1 above, it can be concluded that the data of Interest Rate which is the interest rate of Bank Indonesia Certificates (SBI) is evenly distributed because the standard deviation value is smaller than the average value. The spread of the data tends to lead to the minimum value, because the skewness value is less than the mean.

The standard deviation value of the Exchange Rate variable which is the dollar exchange rate against the rupiah is smaller than its average, indicating that the data is good with a flat spread. The spread of the data tends to the left, because the skewness value smaller than the mean.

As for the Share Price, which is the closing share price of the end of the year, shows that its mean value is greater than its variant. This means that the distribution is quite evenly distributed, since the mean is about its minimum and maximum values. Data congestion tends to the right.

**Multiple Regression Test Result**

After the descriptive statistical test, the data were analyzed using multiple regression with SPSS Statistics version 17.0. The purpose of using multiple regression test is to prove the influence of financial variable and macroeconomic factor to Stock Price. The observational data obtained from 11 companies that are samples of companies for five consecutive years from 2010 to 2014 using purposive sampling are 55 observations (11 companies’ x 5 years). Based on the output of the analysis, the effect of DER, ROE, PER, Interest Rates and Exchange Rate on Stock Price is presented in Table 2 as follows:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coeff.</th>
<th>Beta</th>
<th>t count</th>
<th>T Sig.</th>
<th>Exp.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constanta</td>
<td>14.3311</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DER</td>
<td>-1.232</td>
<td>-0.311</td>
<td>-3.736</td>
<td>0.000</td>
<td>Sig.</td>
</tr>
<tr>
<td>ROE</td>
<td>0.068</td>
<td>0.895</td>
<td>10.702</td>
<td>0.000</td>
<td>Sig.</td>
</tr>
<tr>
<td>PER</td>
<td>0.029</td>
<td>0.124</td>
<td>1.616</td>
<td>0.112</td>
<td>Not Sig.</td>
</tr>
<tr>
<td>Interest Rate</td>
<td>-1.237</td>
<td>-0.844</td>
<td>-0.237</td>
<td>0.814</td>
<td>Not Sig.</td>
</tr>
</tbody>
</table>

Table 2 shows that based on the results of multiple regression tests, the value of coefficient of determination (R-Squared) is 0.732. It shows that independent variable able to explain variation of dependent variable change equal to 73.2%, while the rest equal to 26.8% explained by other variable outside variable used in this research.

The relationship and magnitude of influence between each independent variable to the dependent variable is reflected in the equation of the regression model. Based on Table 2, the regression model formed can be described in the following equation:

\[
Y = 14,331 - 1,232X_1 + 0.068X_2 + 0.029X_3 - 1,237X_4 + 1,603X_4 + \varepsilon
\]

From Table 2 it can be seen that by doing F test that is by comparing the value of Sig. F (P-value of F-arithmetic) with \( \alpha = 0.05 \). If the value of Sig. F less than \( \alpha = 0.05 \), it can be said simultaneously independent variables have a significant influence on the dependent variable, and vice versa. Based on the result of multiple regression test in Table 2 the value of Sig. F is 0.000 or less than \( \alpha \), or Sig can be formulated \( F < \alpha \). Based on the results of the F test, it can be concluded that the DER, ROE, PER, Interest Rates and Exchange Rate variables are able to explain the effect on the food and beverage prices listed on the Indonesia Stock Exchange of 73.2% which can be seen on the value of R2.

Then t-test is done by comparing the significance value of t-count (T Sig.) each independent variable with \( \alpha = 0.05 \). If the significance value of t-count is smaller than \( \alpha = 0.05 \), then the independent variable can be said to have a significant influence on the
dependent variable, and vice versa. Based on the results of multiple regression test in Table 2, for the DER (X1) variable, the t-count value is -3.736 with the significance level (t Sig.) of 0.000. Based on that, the value of t Sig. X1 < α, so it can be concluded that DER individually (partial) significantly influence the Stock Price.

In the variable ROE (X2), the t-count value of 10.702 with the significance level (T Sig.) Of 0.000. Based on this, the value of T Sig. X2 < α, so it can be concluded that ROE individually (partial) effect significantly to stock price. In the variable PER (X3), the t-count value of 1.616 with the significance level (T Sig.) Of 0.112. Based on this, the value of T Sig. X3 > α, so it can be concluded that PER individually (partial) have no significant effect on Stock Price.

In the variable of Interest Rate (X4), the t-count value is -0.237 with significance level (T Sig.) Of 0.814. Based on this, the value of T Sig. X4 > α, so it can be concluded that the Interest Rate is partially no significant effect on Stock Price. In the Exchange Rate variable (X5), the t-count value of 0.307 with the significance level (T Sig.) Of 0.760. Based on this, the value of T Sig. X5 > α, so it can be concluded that the exchange rate individually (partial) does not significantly affect the Share Price.

DISCUSSION

The Impact of DER to Stock Price
From Table 2 it can be seen that the result of the research shows that DER has negative effect to stock price. The size of DER will affect the size of the company's stock price. The higher DER means that the company's debt is also low resulting in higher risk from the company. Conversely, the lower the DER, the risk of the company is also small so as to attract investors to make an investment. The amount of DER can lead to assumptions for investors that the company has a greater risk because most of the funds obtained comes from debt. High levels of debt also assume that the company has a burden in its operations so that the interest of investors in investing their shares in the company to be reduced.

The results of this study in accordance with previous research is the study of Dimitropoulos (2007) and Stella (2009) which states that DER has a negative effect on stock prices. However, the results of this study contradict the research conducted by Kabajeh (2012) which states that DER has a positive effect on stock prices and research from Almas Hijrah (2007) stating that DER has no effect on stock prices.

The results of this study are not in accordance with the theory Modigliani & Miller (MM) where in theory stated that the company will have maximum value if the company has a lot of debt. Companies that have lots of debt will reduce the tax burden so that corporate profits will increase. It will raise the stock price. However, from the results of this study that occurred just the opposite. Companies with an increasingly large DER ratio then the risk will also be greater due to correlation with corporate bankruptcy rate.

Theoretically, Debt to Equity Ratio has a negative effect on stock price. Companies that have a higher DER ratio will lower the stock price of the company. This can happen because the higher DER indicates that the company's debt is getting higher as well as at the level of risk. Therefore, investor interest in investing also decreases and it will result in the decline in stock prices.

The Impact of ROE to Stock Price

In practice an investor will be attracted to a stock that will give a big return or profit. The greater the ROE, the more optimal the use of capital itself in a company in generating profit and increase in profit means the growth of a progressive nature, thus the stock price will also rise.

Hanafi (2008: 43) suggests that high numbers for ROE indicate a high level of
profitability. This ratio is a measure of profitability seen from the point of view of shareholders. Thus, investors will be interested to invest in companies with high ROE. From research, it is indicated that ROE have a positive effect on stock price. The results of this study are in accordance with previous research that is the research of Edi Subiyantoro (2003) and Syafriel (2005) who argued that the ratio of ROE has a positive effect on stock prices.

This study contradicts research conducted by Ali (2012) which states that ROE has a negative effect on stock prices and research from Kabajeh (2012) stating that ROE has no effect on stock prices. Based on the results above, it can be concluded that ROE has a positive effect on the stock price of the company. This effect can be due to potential investors preferring companies that provide high returns rather than investing with low returns. Companies with high ROE means the company is more optimal in using their own capital.

The results are in accordance with signalling theory (Signalling Theory) where the theory states that good company conditions will provide a good signal to investors. In this case a high ROE gives an idea that the company can provide a high profit as well so that stock prices will also rise. The results are also in accordance with dividend discount model theory.

**The Impact of PER to Stock Price**

Companies that grow at a high growth rate (which means have good prospects), usually have a high PER. Conversely, companies that have low growth, will have a low PER as well (Hanafi, 2008: 43). If the prospect of a good company then it will be able to attract investors to invest in a company. This will cause the stock price to rise.

The results showed that PER effect is not significant to stock prices. Based on the higher theoretical ratio PER, then the investor's assessment of the stock will be higher so it will cause the stock price to be high. The results of this study contradict the theory that the PER has a positive effect on stock prices. The results of this study are also not in accordance with research conducted by Sharma (2011), Ilmi (2012), Srinivasan (2012), and Nidhi (2013) which suggests that PER has a positive effect on stock prices.

The results of this study also contradict the results of research from Marian Vorek (2009) and Nishat (2011) which states that the PER has a negative effect on stock prices. This study is in accordance with signalling theory (Signalling Theory) because in this case the increase in PER will also impact on rising stock prices.

This is contrary to the theory expressed by Sharpe, Gordoon and Baley (2006), which states that firms with high growth opportunity opportunities have a high PER as well, and this indicates that the market expects future earnings growth. The greater the PER the greater the stock price. With these shareholders will believe that bigger companies will be accompanied by high stock prices as well. Based on the results above, PER ratios do not significantly affect stock prices. Theoretically, the higher the PER ratio will cause investors to be more interested in investing. The rising PER ratio will then make investors expect higher growth from the company. Thus, the company's stock price will rise.

This study is not in line with the results of research conducted by Trisna (2011) which states that PER has a positive influence on stock prices. Where, PER can assist investors in viewing the company's performance from year to year. So PER cannot be an important factor for investors in making investment decisions, and especially for making a good strategy in investment.

**The Impact of Interest Rate to Stock Price**

The results show that interest rates have no effect on stock prices. Rising interest rates will not necessarily increase or decrease
interest rates are not used as an investor in consideration in investing. Interest rates set by Bank Indonesia did not affect investors' decision to invest in the manufacturing sector.

Based on the results of the above research, it can be concluded that interest rates have a negative effect is not significant to stock prices. This is in contrast to the theory that interest rates have a negative influence on stock prices. This is because the increase in interest rates only affects the interest of a person in investing in savings and deposits so as not to affect the decision of investors in investing in the manufacturing sector. The increase in BI rate will have an impact on the banking sector. The impact of monetary policy for interest rate causing the interest of financing become higher. Automatically, that matter would impact to a lot of companies for pricing their product higher, or cut their producing, and the possibility to increasing their stock price more obvious.

The results of this study are in accordance with the research of Achmad Thobarry (2009), Agung (2013), and Suramaya (2012) where interest rates have no effect on stock prices. However, the results of this study contradict the research of Al-Shubiri (2010), Nishat (2011), Alam (2009), Ilmi (2012), Ghazi (2012) and Atul (2012) that interest rates negatively affect stock prices and research from Adjasi (2009) which states that interest rates have a positive effect on stock prices. The results of this study do not match the signalling theory, because the increase in interest rates does not give any impact on the stock price of manufacturing companies.

The Impact of Exchange Rate to Stock Price

The results showed that the exchange rate did not affect the stock price. This means that any movement of the dollar exchange rate with the rupiah will affect the movement of stock prices as well. When the exchange rate rises then the stock price falls. Conversely, if the exchange rate falls then the stock price rises. The strengthening of the rupiah against the USD will affect the purchasing power of importers which will affect the profit perusahaan with share price of the company will go down. The results of this study are in accordance with the research of Thobarry (2009), Aroni (2011), Kasman (2003) and Atul (2012) stating that exchange rate has no effect on stock prices. However, the results of this study contradict the research conducted by Gopalan (2010) which states that the exchange rate does not affect the stock price.

Based on the results of the above research, it can be concluded that the exchange rate has no significant effect on stock prices. When the exchange rate rises indicates that the rupiah weakened against USD, so the amount of rupiah issued by importers becomes larger. Rupiah issued in connection with the fulfilment of production raw materials. This causes the cost of production to rise and the company's profit to fall. Thus, will cause the company's stock price also fell in order to attract investors in investing shares in manufacturing companies. In addition, if the rupiah weakens and the USD strengthens then investors will be more interested in investing in the form of USD than in the form of stock so that the stock price will decrease.

The results of this study in accordance with signalling theory because the rise and fall of the exchange rate between dollar and rupiah will give a signal to investors in taking investment decisions. In this case if the dollar exchange rate against the rupiah rose then it will impact the fall in stock prices so that will affect the decision of investors. Investors will prefer investing in dollars rather than stocks. In determining the stock price not only comes from internal factors of the company but also from external companies. This research can be used as a guide for investors and potential investors in investing shares in manufacturing companies. Internal and external factors of the company become an
important consideration in taking a decision to invest in shares. These factors can also be considered for companies in determining stock prices.

CONCLUSION

Based on the results of the analysis that has been done can be concluded that the variables affecting the stock price of the company is a variable that is fundamental and technical. Both variables are used as a benchmark for determining investment decisions and in determining stock prices to be more accurate because the analysed not only comes from internal companies but also from external companies. The fundamental variable has a positive effect to stock price is ROE and PER ratio. High ROE will attract investors because after all investors will always expect a high rate of return. Similarly, the PER also has a positive effect on stock prices that illustrate that the increase in PER will be followed by a rise in stock prices. While the fundamental variables that negatively affect the stock, price is the ratio of DER where the higher DER will cause the decline in stock prices of the company. Investors will assume that high DER means high corporate debt so that the company is riskier than companies with low DER. The company's obligation to pay its debts is considered to be a huge burden so that investors do not want to invest in the company.

In this study, interest rate variable has no effect on stock price. Interest rate used in this research is BI rate. The rise in interest rates did not have any impact on the stock price of manufacturing companies. This can happen because the interest rate will only affect investors who will invest funds in the form of savings and time deposits so that the price of shares that have a large impact of interest rates is the price of banking stocks.

In this study the exchange rate used is the exchange rate of rupiah against USD. The relation to stock prices is that exchange rates show a negative effect on manufacturing stock prices. This relates to the ability of the importers in paying the amount of money incurred if the exchange rate rises. The meaning of the exchange rate rises here is if the rupiah weakens and the USD strengthens. So that there will be a lot of rupiah paid by importers in fulfilment of its raw materials which will affect the decrease of stock price. It happened because importers from Indonesia spend a lot of rupiah for buying USD, and causing USD rate increase. So, it would make the stock price decrease, and foreign trader feel easier for buying stock in Indonesia because the price of rupiah become cheaper than before.

SUGGESTION

For further research is expected to add both fundamental and technical variables analysed how the effect on stock prices. By adding the fundamental and technical variables analysed it will be more and more information used in considering investment decisions.

In this study, the company sampled is a company in the manufacturing sector. Expected for further research, it would be better if all companies listed on the BEI used as sample research. This will be known differences in the characteristics of companies in the manufacturing sector with other sectors related to fundamental and technical variables that affect stock prices.

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