The Mediating Effect of EPS on the Relationship between ROE and Stock Prices of 15 Banks Listed on Indonesia Stock Exchange

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Abstract
This research is descriptive which collects and presents data from financial statements from 2014 - 2018 by taking ROE and EPS data as independent variables and stock prices as the dependent variable. Measurement scales used statistical scales such as regression analysis test, f test, and t-test. The results showed that 15 bank sector companies as a place of this research had good management performance and performed their functions well, it can be seen from the ratio of ROE and EPS. From the test results based on the regression analysis test, f test, and t-test, the results are obtained that the contribution of ROE to changes in the Stock price is 25.8%, with EPS mediation, the contribution of ROE and EPS to changes in the Stock price is found to be 47.2% and the change in the value of R-Square change of 0.219 or 21.9%. Significant test results indicate a significant effect between ROE on Stock prices. This can be seen from the F-test value of 26,668 and significant value of 0,000 at α = 0.05 or 5% and with the presence of EPS mediation, the effect of ROE and EPS on the stock price is significant with a significant level of 0,000 at α = 0.05 or 5% with F. The existence of EPS mediation, it was found that ROE and Stock's Prices have a significant effect of 0.019 at a significant level of 5%. Thus any change in ROE will change to an increase in Stock Price by 0.236 significantly. Therefore, because ROE and the Stock price have significant value, EPS does not fully mediate the effect of ROE and the stock pricetest 34,129.

Keywords: Stock Price; Return on Equity; Earning per Share

1.0 INTRODUCTION

In this modern era, most people make investments to run as a source of business income because they invest not only money used as capital to invest. In investing, stock prices and profitability ratios are important indicators for investors to assess the company's prospects in the future. Stock prices can change at any time depending on the amount of supply and demand of investors in these shares. But not all investors know what kind of shares can be trusted for investment. During the coronavirus disease (Covid-19), the Indonesia Composite Index (ICI) had touched its lowest point which caused many bluechip shares to plummet and prices to become unnatural. Therefore, economic conditions become increasingly uncertain and make the stock market volatile. This study aims to determine the factors that cause changes in stock prices.

In this case, the authors chose 15 banking sector companies as a place of research because they have good management performance and perform their functions properly. It can be seen from the ROE and EPS ratio. Banks are financial institutions that play a very important role in economic activities because credit activities and various the services provided by banks can serve various needs in various economic and trade sectors. The more advanced globalization, the banking world is very active even in the progress of the economy. This is because the bank is a financial intermediary institution between surplus economic units (excess funds) and deficit economic units (lack of funds). So it can be said that banks are the core of every country's financial system.

According to Darminto & Yaningwati (2015) investment is a form of expenditure carried out now to buy real assets and financial assets to earn more income in the future. Real assets are a form of investment that is tangible or can be seen in the form of land, houses, gold, precious metals, and so on. While financial assets are investments in the form of securities such as deposits, bonds, notes or bills of exchange, checks, stocks, and so forth. Stock prices and profitability ratios are important indicators for investors to assess the company's prospects
in the future. Stock prices can change at any time depending on the amount of supply and demand of investors in these shares. Shares belonging to the blue-chip category may also experience a decline, and vice versa stocks that are categorized as small-cap stocks without unexpectedly rising stock prices. In general, several factors influence the rise and fall of stock prices, namely internal factors, and external factors. Internal factors are factors that are rooted from within the company while external factors are rooted from outside the company. Used in this research is the company’s internal factors contained in the company’s financial statements in the form of financial ratios such as profitability ratios. The types of profitability ratios used for this research are return on equity (ROE) and earnings per share (EPS).

According to Deitiana (2018) argues that return on equity (ROE) is the ability of the company’s private capital rentability to generate profits. ROE is important information because it reflects how much profit the company makes in each rupiah that has been invested by investors. The greater this ratio, the more investors will be attracted and the stock price will rise.

According to Mahardika and artini (2017) Earning Per Share (EPS) is earnings per share, which is generated from the distribution of net profit after tax (EAT) with total shares. Just like ROE, this ratio information is also important in helping investors see the prospect of a company's earnings in the future. Then the rise in EPS can raise demand for shares which will raise Stock prices as well.

Previous studies of these two ratios (ROE and EPS) on stock prices gave different results. The results of research from Utami and Darmawan (2018) return on equity does not have a significant influence on stock prices while in research Azhari et al. (2016) show that return on equity has a significant influence on stock prices. Furthermore, Siregar and Salman research (2018) shows that earning per share does not have a significant effect on stock prices, while Ismail and yahya (2017) research shows that earning per share has a significant effect on stock prices. Based on the results of previous studies which are contradictory, the authors are interested in making research and take the title: “The Mediating Effect of EPS on The Relationship between ROE and Stock Prices of Infobank 15 Banks Listed on Indonesia Stock Exchange.”

2.0 LITERATURE REVIEW

Price Stock
Shares are securities that are traded freely in the capital market which means ownership. Besides, shares are proof of capital participation of a person entrusted in a company or organization. The stock has a value called stock price.

The stock price is the price of each share traded on the capital market. The stock price is the selling price offered from one investor to another investor after the shares are listed on the stock exchange (Efendi and Ngatno, 2018). There are several types of stock prices according to research study (Fionita, 2011), namely nominal stock prices where the nominal price gives importance to shares because dividends are usually determined based on nominal value, initial stock prices where this price can be determined from how much the issuer’s stock price will be sold to the public, the market stock price is the price announced daily in newspapers or other media, the opening price is the price the seller asks the buyer to apply on the stock market when the stock exchange is opened, the closing price is the price requested by the seller and buyer that occurs when the end of the open day, while the highest and lowest prices are very high and very low prices on an exchange day, and the average price of shares is the sum of the highest and lowest prices and then divided into two so that they become equal.

According to research studies Ratih et al. (2013), changes in stock prices are inevitable from the many requests and offers for these shares. If greater demand compared to supply will cause stock prices to rise, and vice versa if greater supply than demand for shares will cause stock prices to fall. The stock price will experience movement at any time, due to the many factors that affect both the seller and the buyer. Factors that affect stock prices can be seen from the company’s financial statements, inflation rates, deposit interest rates, the number of profits earned by the company, marketing strategies, risk levels, and returns. Apart from the above factors, the condition of a company can influence the movement of stock prices, this can be seen from the performance of a company. The better the performance of a company, the greater the profits derived by a company which will certainly benefit investors as well.

Return on Equity (ROE)
Return on equity is a measure of profitability that shows the profits of a company in generating profits that have been invested by shareholders stated in percentages. Return on equity is a ratio that shows how much the capital contribution of a company in generating net profit (Hery, 2015).

In other words, return on equity has the function of evaluating the company’s management in measuring the effectiveness of the company, as a comparison ratio of similar companies, can analyze capital use efficiently,
and can be used for corporate decisions in expanding. In this case, the return on equity (ROE) can be calculated using the following formula:

\[
\text{Return On Equity} = \frac{\text{Net Income After Tax}}{\text{Shareholders' Equity}}
\]

**Earning per Share (EPS)**

According to research studies (Damayanti et al., 2014) earnings per share is a measure of a company's ability to generate profits per share. Halim (2005) states that what is meant by earnings per share is the ratio between the net profit after tax obtained by the issuer and the number of shares outstanding. For investors, earnings per share are the most basic and useful information, this is because it can illustrate the prospects of company earnings in the future. Earning per share tends to rise, the possibility of profits to be obtained by investors is greater than the losses that might occur. Thus, to assess the success of a company can be seen from the amount of earnings per share. In this case earnings per share (EPS) can be calculated using the following formula:

\[
\text{Earning Per Share} = \frac{\text{Net Profit After Tax}}{\text{Number of Shares Outstanding}}
\]

**Theoretical Thinking and Hypothesis Framework**

Profitability ratios are factors that can affect stock prices because it shows the good or bad performance of the company. If a company has a high net profit, there will be an increase in the number of investor requests for these shares. There are two profitability ratios used by the authors that greatly affect the stock price of a company, the ratio of return on equity (ROE) and earnings per share (EPS).

If the return on equity in a company is high, then the company has the ability to use capital from investors effectively so that investors will be more confident that investing in the company will be profitable. Because with the greater return on equity, it means that the company has been efficient in generating profits by processing all the company’s shareholder funds.

While earnings per share for investors is the most basic and useful information, this is because it can illustrate the prospects of company earnings in the future. Earning per share tends to rise, the possibility of profits to be obtained by investors is greater than the losses that might occur. Thus, to assess the success of a company can be seen from the number of earnings per share.

This study uses the ratio of return on equity (ROE) and earnings per share (EPS) as a measurement tool in assessing the effectiveness of performance in a company within a period of time. Based on these theories that have been described, the authors provide a temporary hypothesis from the following research:

H1: There is a significant influence between return on equity (ROE) on stock prices

The return on equity is felt to affect stock prices, this is in accordance with previous research that ROE significantly affects stock prices (Azhar et al., 2016; Tantra and Dewi, 2015). However, this contrasts with other studies which suggest that there is no significant effect on stock prices (Egam et al., 2017; Utami et al. 2018)

H2: There is a significant effect between earnings per share (EPS) on stock prices

The earnings per share can be felt its influence on stock prices, this is in accordance with previous research that EPS significantly affects stock prices (Ismael, 2017; A. Edison et al., 2019). But contrary to parties (Siregar and Salman, 2018; Tyas & Saputra, 2016) where there is no significant effect on stock prices.

H3: There is a mediating effect of eps on the relationship between roe and stock prices

The return on equity has a significant positive effect on stock prices, this is following research conducted by Hutauruk (2014), research conducted by Shehzad et al. (2014) found the results that EPS was a significant positive effect on stock prices. Research Wang et al. (2013) indicates that high ROE will result in the higher the stock price of a company is in line with earning per share is getting higher due to increased ROE. In other words, it can be said that increasing EPS will be in line with the increasing ROE as a whole will directly lead to an increase in the company's share price. Tantra and Dewi’s research (2015) shows that EPS significantly has a positive effect on stock price, and EPS fully capable of mediating the effect of ROE on the stock price.

### 3.0 METHODOLOGY

**Population and Sample Determination Procedure**

The population is all the objects to be studied, while the sample is a portion of the population contained in the research. The target population in this study are all banking sub-sector companies which are 25 companies and are listed on the Indonesia Stock Exchange.
If the study population is large and it may not be possible to conduct a study of the entire population, the authors can use a sample of 15 data drawn from that population. The list of research samples are shown in Table 1.

<table>
<thead>
<tr>
<th>Company Code</th>
<th>Name of Company</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGRO</td>
<td>Bank Rakyat Indonesia Agroniaga Tbk</td>
</tr>
<tr>
<td>BBCA</td>
<td>PT Bank Central Asia Tbk</td>
</tr>
<tr>
<td>BBKP</td>
<td>Bank Bukopin Tbk</td>
</tr>
<tr>
<td>BBNI</td>
<td>PT Bank Negara Indonesia (Persero) Tbk</td>
</tr>
<tr>
<td>BBRI</td>
<td>PT Bank Rakyat Indonesia (Persero) Tbk</td>
</tr>
<tr>
<td>BBTN</td>
<td>PT Bank Tabungan Negara (Persero) Tbk</td>
</tr>
<tr>
<td>BBYB</td>
<td>PT Bank Yudha Bhakti Tbk</td>
</tr>
<tr>
<td>BDMN</td>
<td>PT Bank Danamon Indonesia Tbk</td>
</tr>
<tr>
<td>BJBR</td>
<td>Bank Pembangunan Daerah Jawa Barat dan Banten Tbk</td>
</tr>
<tr>
<td>BJTM</td>
<td>Bank Pembangunan Daerah Jawa timur Tbk</td>
</tr>
<tr>
<td>BMRI</td>
<td>PT Bank Mandiri (Persero) Tbk</td>
</tr>
<tr>
<td>BNGA</td>
<td>PT Bank CIMB Niaga Tbk</td>
</tr>
<tr>
<td>INPC</td>
<td>Bank Artha Graha Internasional Tbk</td>
</tr>
<tr>
<td>MCOR</td>
<td>PT Bank China Construction Bank Indonesia Tbk</td>
</tr>
<tr>
<td>PNBN</td>
<td>Bank Pan Indonesia Tbk</td>
</tr>
</tbody>
</table>

Source: Processed data, 2020

Type and Data Resources
This research is a causal associative method with a quantitative approach. Quantitative research is research with data in the form of numbers to be analyzed using statistics. (Sugiyono, 2015) states that the associative method is a research method that describes and tests the hypothesis of the relationship between two or more variables. This study uses secondary data obtained from coal companies listed on the Indonesia Stock Exchange (IDX) and the data taken is the price of outstanding shares, net income, and total assets. The company's annual financial statement data is obtained from the Indonesia Stock Exchange by downloading on the website www.idx.co.id, and the stock price is obtained from the websites www.idx.co.id and www.duniainvest.com and requests approval and permission from the Exchange Indonesian effect. The research data includes company data in the banking subsector which was listed on the Indonesia Stock Exchange in the 2014-2018 period.

Operational Variables
Variable Independent ($X_1$ and $X_2$)
In this study, the independent variable comes from the company's profitability ratio. Profitability is a description of the profit level of a company in one period, from this profitability ratio, can find out the number of profits obtained and the development of company profits from time to time, this profitability ratio can also be used to assess employee performance and measure the company's ability to earn profits. There are many profitability ratios but the ones used in this study are ROE ($X_1$) and EPS $X_2$.

Dependent Variable (Y)
The dependent variable in this study is the stock price. The stock price is the price determined by the market at a certain time that depends on the supply and demand for shares in the capital market. The higher the company's stock price, the better the company's prospects.

3.0 RESULTS AND DISCUSSION

Effect of ROE and EPS on Stock Price
To find out the relationship between ROE and EPS with stock prices. Then the researchers conducted a linear regression analysis, f test, and significant test (t-test).
Table 2. Regression Test Results for ROE and EPS Contribution to Stock Prices in Banking Companies Listed on the Indonesia Stock Exchange 2014-2018

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>Change Statistics</th>
<th>R Square Change</th>
<th>F Change</th>
<th>df1</th>
<th>df2</th>
<th>Sig. F Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.517a</td>
<td>.268</td>
<td>.258</td>
<td>454.839.035</td>
<td>.268</td>
<td>26.668</td>
<td>1</td>
<td>73</td>
<td></td>
<td>.000</td>
</tr>
<tr>
<td>2</td>
<td>.698b</td>
<td>.487</td>
<td>.472</td>
<td>383.417.274</td>
<td>.219</td>
<td>30.729</td>
<td>1</td>
<td>72</td>
<td></td>
<td>.000</td>
</tr>
</tbody>
</table>

Source: SPSS Result, 2020

Table 2 shows that in model 1 the value of R-Square is 0.258 which means the ROE contribution to changes in the Stock Price is 25.8%. Regarding model 2, it was found that with the mediation of EPS, the contribution of ROE and EPS to changes in the Stock Price was 47.2% and there was a change in the R-Square change value of 0.219 or 21.9%.

Table 3. Test Results of Significant ROE and EPS against Stock Prices in Banking Companies Listed on the Indonesia Stock Exchange 2014-2018

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Regression</td>
<td>5.517E8</td>
<td>1</td>
<td>5.517E8</td>
<td>26.668</td>
</tr>
<tr>
<td>Residual</td>
<td>1.510E9</td>
<td>73</td>
<td>2.069E7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2.062E9</td>
<td>74</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Regression</td>
<td>1.003E9</td>
<td>2</td>
<td>5.017E8</td>
<td>34.129</td>
</tr>
<tr>
<td>Residual</td>
<td>1.058E9</td>
<td>72</td>
<td>1.470E7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2.062E9</td>
<td>74</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: SPSS Result, 2020

As seen in Table 3, significant test results indicate that in Model 1 there is a significant effect between ROE on Stock Prices. This can be seen from the F-test value of 26,668 and significant value of 0,000 at α = 0.05 or 5%. While in model 2, it was found that with the mediation of EPS, the effect of ROE, EPS on the Stock Price was found to be significant with a significant level of 0.000 at α = 0.05 or 5% with F-test 34,129.

Table 4. Results of T-Test Data Management (Model Summary)

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>T</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>-346.188</td>
<td>944.765</td>
<td>-.366</td>
</tr>
<tr>
<td>ROE</td>
<td>321.321</td>
<td>62.222</td>
<td>.517</td>
<td>5.164</td>
</tr>
<tr>
<td>2</td>
<td>(Constant)</td>
<td>-446.649</td>
<td>796.618</td>
<td>-.561</td>
</tr>
<tr>
<td>ROE</td>
<td>146.823</td>
<td>61.173</td>
<td>.236</td>
<td>2.400</td>
</tr>
<tr>
<td>EPS</td>
<td>10.501</td>
<td>1.894</td>
<td>.546</td>
<td>5.543</td>
</tr>
</tbody>
</table>

Source: SPSS Result, 2020

As seen in Table 4, significant test results indicate that among the independent variables it is seen that in model 1 there is a significant influence on the ROE variable on the Stock Price with a significant value of 0.000 at a significant level of 5%. Thus any change in standard deviation and change in the stock price of .517. While in model 2, found by the existence of EPS mediation, it was found that ROE and Stock’s Prices have a significant effect of 0.019 at a significant level of 5%. Thus any change in ROE will change to an increase in Stock Price by 0.236 significantly.

Earning per share and Stock Prices found a significant influence with a significant level of 0,000 at a significant level of 5%, and changes to the EPS will change the Stock Price by 0.546. Therefore, because ROE and the Stock Price have significant value, EPS does not fully mediate the effect of ROE and the Stock Price.
Discussion

In this study, it was found that hypothesis 1 had a statement that there was a significant effect between ROE and Stock Prices. ROE is the level of the company’s ability to generate profits which is a proxy for profitability. This ratio is used by investors. The results showed that there was a significant effect between ROE and Stock Prices. The results of this study are supported by Azhari et al. (2018), Tantra and Dewi, (2015) and not supported by previous research by Egam et al. (2017); Utami and Darmawan, (2018).

In this study, it was found that hypothesis 2 has a statement that there is a significant influence between EPS and Stock Prices. EPS is the ratio of net income provided per share. The results showed that there was a significant effect between EPS and Stock Prices in model 2 for a significant level of 5%. The results of this study were supported by Ismael (2017); A. Edison et al. (2019) and not supported by Siregar and Salman (2018); Tyas & Saputra (2016).

Mediation is a way to resolve disputes between two or more parties with real effects. Usually, a third party, the mediator, helps the parties to negotiate a settlement. More specifically, mediation has a structure, schedule, and dynamics that ordinary negotiations lack. The mediator acts as a neutral third party and facilitates rather than directs the process. In this study, the mediation effect refers to EPS that mediate the relationship between ROE and stock price.

In this study, it was found that hypothesis 3 has a statement that there is a significant influence between ROE and stock prices supported by previous research by Hutauruk (2014). EPS statement has a significant positive effect on stock prices supported by Shehzad et al. (2014). A high ROE ratio will result in a higher share price of a company that is in line with the higher Earning Per Share due to increased Return on Equity (ROE). The results of this study are supported by previous research by Wang et al. (2013) and Tantra (2015).

4.0 CONCLUSION

From this study, it was found that the contribution of ROE to changes in stock prices in banking companies listed on the Indonesia Stock Exchange was 25.8%, and by using EPS the ROE and EPS contribution to changes in stock prices amounted to 47.2%. Significant test results that have been done show that there is a significant influence between ROE on the stock price which can be seen from the F-test value of 26,668 and significant value of 0.000 at \( \alpha = 0.05 \) or 5%, thus any change in the standard deviation will change the stock price by .517. and by using EPS, it is found that the effect of ROE and EPS on stock prices is significant with a significant level of 0.000 at \( \alpha = 0.05 \) or 5% with F-test 34,129. Based on the Significant Test results show that any change in ROE will change the increase in stock prices by .236 significantly. Found that ROE and Stock’s Prices have a significant effect of 0.019 at a significant level of 5%. Thus any change in ROE will change to an increase in Stock Price by 0.236 significantly. Therefore, because ROE and the Stock price have significant value, EPS does not fully mediate the effect of ROE and the stock price. Thus the existence because ROE and Stock Price have significant value, then EPS does not fully affect ROE and Stock Prices.

From the results of this study, researchers can see that the relationship between ROA and EPS with stock prices is very good so the researchers propose that investors can invest in banking companies listed on the Indonesian stock exchange. Besides, the banking sector is an essential sector for every country because some many companies or individuals always need banking services and are monitored and regulated by the government, thus managing funds from investors in the banking sector will be professional and transparent and this will be a positive value in the eyes Public.

References


