The effect of return on equity (ROE) and debt to equity ratio (DER) on stock prices with inflation as mediation variables: Case study on banking companies listed on the Indonesia stock exchange 2014-2020 period

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Abstract

This study aims to prove whether or not Return on Equity (ROE) and Debt to Equity (DER) affect stock prices with inflation as an intervening variable. Case studies on banking companies listed on the Indonesia Stock Exchange from 2014 to 2020. This study applies a comparative casual method with a quantitative approach. The data analysis technique applied in this study uses library research methods related to the application of secondary data. The population is 45 issuers of the sectoral banking index. Meanwhile, the research sample consisted of 5 issuers of the sectoral banking index obtained by applying the purposive sampling method. The data analysis technique applied in this study uses multiple regression analysis and path analysis. The study results concluded that there was a positive and significant effect of Return On Equity and Debt To Equity Ratio on Inflation. There is a negative and significant effect of Return On Equity on Stock Prices. Debt To Equity Ratio has a positive and insignificant effect on stock prices. However, there is a negative and significant effect of inflation on stock prices. For example, inflation can mediate Return On Equity on stock prices, which means that an increase in the profitability (ROE) aspect of the banking sector issuer index will increase the inflation rate, which impacts the decline in stock prices in the capital market. Inflation is not able to mediate the effect of the Debt to Equity Ratio on the price aspect, which indicates that with an increase in the number of problematic banking sector indexes in terms of the efficiency of company assets, ultimately, investors tend to consider more considering the fundamental aspects of other companies which not only show how much the company obtains total net sales.

Keywords: Return on Equity, Debt to Equity Ratio, Inflation, Stock Price

Introduction

In today's modern era, the word investment is no longer a taboo thing for the people of Indonesia; almost all people in Indonesia have made investments, such as saving in a bank to get interested in the future or buying gold to resell in the future. The price goes up. According to Tandelilin (2010), investment can be interpreted as a commitment to invest several funds at this time to obtain profits in the future. The price goes up. According to Tandelilin (2010), investment can be interpreted as a commitment to invest several funds at this time to obtain profits in the future. Investment delays current consumption and uses inefficient production for a certain period (Jogiyanto, 2010).

There are several types or forms of investing. However, it can generally be divided into two types from the type of assets invested, namely investment intangible assets and investment in financial assets. Tangible assets have a form and are commonly done by the community, for example: investing in land, gold, houses, and precious metals. At the same time, financial assets are assets whose form is not visible but still have a high enough value. Some examples of financial assets include money market instruments, stocks, mutual funds, and bonds.
In general, these financial assets are found in the banking world and the capital market. The capital market in Indonesia is known as the Indonesia Stock Exchange or the Indonesian Stock Exchange (IDX). The capital market creates opportunities for people to participate in developing an economy (Sunaryyah, 2006). People who invest in the capital market are called investors. In general terms, investors or financiers are parties who invest their capital in the form of securities. According to Tandellilin (2010), investors can be divided into individual or institutional investors. From the investor's point of view, the real purpose of investing in the capital market is to expect a high-profit level. The level of profit obtained for investors if they invest their capital in the capital market is in the form of shares may be much greater than the level of profits obtained from investing in deposits or mutual fund investments. However, it is possible that investing in the capital market can experience higher losses if investors do not understand the internal and external factors of the company's fundamentals and the domestic economic climate.

Since there is no apparent certainty about the benefits that investors get when investing in stocks, investors need a lot of rational considerations by collecting various types of information needed for investment decision-making. Many factors can influence the rise and fall of stock prices. However, according to Martalena and Malinda (2011), two factors can affect the rise and fall of stock prices: internal and external factors. Internal factors are within the company that is specific to the stock, such as sales, financial performance, management performance, company conditions, and the industry in which the company operates. Meanwhile, external factors are macro factors that influence stock prices on the stock exchange, such as inflation, interest rates, and foreign exchange rates, and non-economic factors such as social conditions, political conditions, and other factors.

Therefore, if investors want to invest in the capital market sector, especially stocks, they must have broad enough knowledge to minimize the risks they accept. The rate of return on stock investments, namely dividends and capital gains, is more difficult to predict, so investors must conduct stock analysis to obtain the expected profit (Subekti, 1999). One of them is by analyzing in advance which shares to buy. There are many techniques for analyzing stocks, but market participants’ most common ones are two techniques: technical analysis and fundamental analysis. Technical analysis is an analytical method that studies the behavior of the market or stock through a visual medium to look for opportunities and find out the direction of future prices with previous cycles of movement. At the same time, fundamental analysis is a study that studies matters related to the profits of a business to understand better the nature and characteristics of public companies that issue shares (Ang, 1997). In choosing stocks, fundamental analysis always looks at the company's most recent financial statements to determine whether the stock to be selected is good in the future. Financial statements are records of a company's financial information in a specific accounting period that can describe the company's performance.

The financial statements prepared at the end of each period contain financial responsibilities for running a business. This is one of the tools used to determine the condition of a company's financial health. To measure the level of a company's financial health, an analytical tool commonly known as financial ratio analysis can be used. In the relative and absolute sense, financial ratios are tools that explain certain relationships between one number and another in financial statements. For example, financial statement analysis can provide the best results if used in a combination to show a change in the financial condition or operational performance during a specific period. It can further provide a particular picture of a trend and pattern of change, which can indicate risks and business opportunities (Kuncoro and Suhardjono, 2002). There are many ratios in financial statements, but three ratios are relatively often used by market participants, namely ROA, ROE, and EPS.

Based on this explanation, it makes the writer interested in taking the title of this thesis, namely The Effect of ROE and DER on Stock Prices with Inflation, as a mediating variable in Banking Companies Listed on the Indonesia Stock Exchange. To know the prospects of banking stock prices on the IDX when viewed from the company's ROE, DER, and inflation.

In encouraging domestic economic growth, the role of the banking sector cannot be ignored. Banking as an intermediary institution is undoubtedly one factor that triggers economic movements in all sectors. In short, an increase in demand for bank credit, whether for consumer credit, working capital, or investment, will undoubtedly encourage purchasing power, business growth, and increased investment. According to data from the Central Statistics Agency (BPS), in Indonesia alone, the ratio of banking assets to Gross Domestic Product (GDP) was only 4.44% in the second quarter of 2020, according to data from the Central Statistics Agency (BPS). Although it looks high, the fact is that this position is still very far from Indonesia's neighboring countries, such as Malaysia, Thailand, and Singapore, where the ratio of banking assets to GDP is already very high.

Domestic banks still have vast room to encourage expansion. The growth of bank credit has become the focus of the current government. This is because, in general, in achieving the vision of Indonesia's economic development in 2045, the government needs to encourage the acceleration of structural reforms considering several issues that are still being faced, including low national productivity caused by the low quality of human resources (HR), infrastructure gaps, and low adoption rates. Technology.

Although on the other hand, in the current situation of the Covid-19 pandemic, the banking intermediation function tends to be suboptimal, considering that domestic demand tends to slow down both consumption and investment, which has led to lower demand for bank credit. Nevertheless, the government, BI, and OJK coordinate and try to manage the condition of banking liquidity, considering that in the two crisis episodes experienced by the domestic economy, both the 1997-1998 Asian financial crisis and the 2008 global financial crisis, liquidity in the financial sector, especially banking, needs to be managed in a healthy condition. Therefore, with efforts to promote stability in the banking sector, it is hoped that the banking intermediation function in the real sector is also expected to remain optimal. Currently, the banking sector is transforming the digitalization era. The transformation of the banking industry is the answer to the phenomenon of the development of financial technology (fintech) and the era of the industrial revolution 4.0. Some issues are the emergence of the digital banking era and the industrial revolution 4.0. namely changes in consumption patterns and the desire of people who want...
something easy and fast, the proliferation of financial technology (fintech) both for payments and funding or peer-to-peer (P2P) lending, the factor of trust in a security held by digital banking platforms, regulatory or applicable regulations, as well as developing customer profiles and characteristics, especially millennial and non-millennial customers. This change must be able to be responded to quickly, this is in order to prepare financial service institutions to face digital banking innovation. The shift in people's behavior is a driving factor for banks to innovate to maintain their existence and increase customer loyalty constantly. Such services lead banks into a new era, namely the era of digital banking services. The provision of digital banking services is expected to expand and facilitate financial inclusion and public access to financial services so that it can be done without knowing the limitations of time and place. As digital transformation increases, companies can achieve better customer offerings through greater customization, increased customer satisfaction, and reduced cost of sales. Brynjolfsson and Hitt (2000).

Apart from accelerating structural reforms in the real sector, the government also needs to encourage deepening the financial sector, significantly increasing financial inclusion in the banking sector. Increasing efficiency and strengthening banking capital are also expected to be realized. However, the banking intermediation function can continue to increase to answer the challenges of financing Indonesia's economic development to achieve Indonesia's 2045 vision.

Literatur Review

Stock Price
Shares are a sign of participation or ownership of a person or entity in a company. A share is a piece of paper that explains that the paper owner is the owner of a company that issues the paper or shares. A share has a value or price (Marsis, 2013).

According to Dyah, Suhendro, and Riana (2019), the stock price will rise if more investors buy the shares. This shows that the company is providing a reasonably good performance so that the company's share price also rises. The increase or decrease in stock prices is influenced by many factors consisting of internal factors and external factors. Internal factors are management decisions, internal management policies, and company performance. External factors are economic conditions, government policies, inflation, and political conditions. According to Budi (2020), Changes in stock prices from time to time are common, and the forces of demand and supply cause these changes. If the stock has an increase in demand, the price will increase, and vice versa. The stock price is an indicator of the assessment of the success of the management in managing the company. If a company's stock price always increases, investors and other parties can conclude that the company has been managed properly. The stock price is the price formed on the stock exchange, and generally, the stock price is obtained to calculate the stock value (Kodrat & Indonanjaya, 2010). According to Martono and Harjito (2003) stated that Return on Equity (ROE) is often called the profitability of its capital, intended to measure how much profit is the owner's right of his capital. According to Kasmar (2015), Return On Equity is a ratio to measure net profit after tax with own capital. This ratio shows the efficiency of the use of own capital. The higher this ratio, the better. This means that the company owner's position is getting stronger, and vice versa.

According to Fahmi (2013), the Return On Equity (ROE) ratio is also known as the return on equity. In some references, the total asset turnover ratio or asset turnover ratio is also called the total asset turnover ratio. This ratio examines the extent to which a company uses its resources to be able to provide a return on equity.

Debt to Equity Ratio (DER)
According to Fahmi (2013) Debt to equity ratio is a measure used in analyzing financial statements to show the amount of collateral available to creditors. The formula for calculating the debt to equity ratio is Fahmi (2013) Share holder's equity is obtained from total assets less total debt. In this issue of debt to equity ratio, it is necessary to understand that there is no limit on how many debt-to-equity ratios are safe for a company. However, for conservatives, more than 66% or 2/3 are considered risky for debt to equity ratios.

According to Riyanto (2001) Debt to equity ratio is one of the ratios used to measure the company's solvency level. This is related to financing decisions and calculating the share of each rupiah of own capital, which is used as collateral for the overall debt. This ratio also provides clues to general information about financial feasibility and risks.

Inflation
Many studies on the factors that influence inflation in Indonesia have been carried out, including Theodores,
Vecky, and Henly (2014). The theory that underlies this research is that many factors influence changes in inflation, which are broadly divided into two parts, namely demand-pull inflation and cost-push inflation. Inflation is an increase in general prices prevailing in an economy from one period to another. Inflation is one indicator of economic stability. If the inflation rate is low and stable, it will stimulate economic growth. Whenever there are social, political and economic upheavals at home and abroad, people always relate it to the problem of inflation” (Mankiw, 2006).

Rahardja and Manurung (2004) define inflation as an increase in the price of general and continuous goods so that the currency's value decreases. Like a disease, inflation comes from many causes. Predictable price increases can provide fresh air for economic growth. While low inflation can stimulate and heat economic activity to increase productivity or actual output, soaring inflation can cause severe losses to productivity and individuals through redistribution of income and wealth (Samuelson, Nordhaus, 2004). Rosyidi (2009) also explains that inflation is a symptom of a continuous increase in prices. A price increase that lasts only once or twice and then subsides again is not called inflation. If the increase occurs continuously, that is called inflation or an increase in prices that lasts for a year. So based on the above understanding, the authors conclude that inflation is a condition in which the process of increasing prices continuously for a very long time.

Research Methods

Population

The population in this study has 45 (forty-five) issuers of the banking sector listed on the Indonesia Stock Exchange from 2014 – to 2020. The selection of the research population is based on the consideration that these issuers are included in the sectoral index category of banks, which is one of the crucial sectors in analyzing a country’s economic health.

Sample

The method used by the researcher in connection with the determination of the sample in this study is the application of the purposive sampling method, namely the method of determining the sample followed by many specific considerations. Where the characteristics of issuers that are included in the research sample are as follows:

a. Issuers that are included in the banking sector index category and listed on the IDX in the period 2014 – 2020
b. Issuers who earn positive net income during the study period
c. Not currently or have been delisted by the BEI
d. A banking company capable of digital transformation
e. Included in the LQ45 list for the last five year period

Based on the several categories above, five banking companies can be included in the sample of this study, namely as follows:

<table>
<thead>
<tr>
<th>No</th>
<th>Companies Name</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Bank Central Asia Tbk</td>
<td>BBCA</td>
</tr>
<tr>
<td>2</td>
<td>Bank Negara Indonesia (Persero) Tbk</td>
<td>BBNI</td>
</tr>
<tr>
<td>3</td>
<td>Bank Rakyat Indonesia (Persero) Tbk</td>
<td>BBRI</td>
</tr>
<tr>
<td>4</td>
<td>State Savings Bank (Persero) Tbk</td>
<td>BBTN</td>
</tr>
<tr>
<td>5</td>
<td>Bank Mandiri (Persero) Tbk</td>
<td>BMRI</td>
</tr>
</tbody>
</table>

Data Collection Technique

In this study, the data used is in the form of secondary data. Secondary data is data obtained from existing sources. In connection with using secondary data as a type of research data, the data collection technique applied in this research is to use the Library Research method.

Data Analysis Technique

The data analysis technique in this study used the extended regression analysis method with the application of the path analysis method to test the influence of the intervening variable. In its measurement, the analytical method in this study is supported by using tools by data in the form of Statistical Product and Services Solutions (SPSS) software version 23.0.

Research Results and Discussion

a. Structural Equation Model 1

Based on Table 1, it is known that the regression coefficient value for ROE and DER is indicated by the Unstandardized Coefficients number, where the regression coefficient value for ROE is 8.315 while the regression coefficient value for DER is 2.235. The constant value of structural model 1 is 0.763. Meanwhile, based on Table 2, it is known that the coefficient of determination (R²) of structural model 1 is 0.019, so the residual variance value can be obtained; namely, e = 1-R² = 1-0.019 = 0.862. The empirical causal effect between ROE and DER variables on inflation in the structural equation model 1 can be represented through several
regression equation functions as follows:
1. \( \text{Inflation} = 0.763 + 8.315 \text{ROE} + 2.235 \text{DER} + 0.862e1 \)
2. \( \text{Inflation} = 0.763 + 8.315 \text{ROE} + 0.862e1 \)
3. \( \text{Inflation} = 0.763 + 2.235 \text{DER} + 0.862e1 \)

### Table 3: Results of Multiple Regression Analysis of Structural Model 2

<table>
<thead>
<tr>
<th>Coefficients</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1 (Constant)</td>
<td>.863</td>
<td>.069</td>
<td>7.311</td>
<td>.000</td>
</tr>
<tr>
<td>ROE</td>
<td>-2.192</td>
<td>.788</td>
<td>-1.024</td>
<td>.214</td>
</tr>
<tr>
<td>DER</td>
<td>.233</td>
<td>.135</td>
<td>.159</td>
<td>1.931</td>
</tr>
<tr>
<td>INFLATION</td>
<td>-0.072</td>
<td>.078</td>
<td>-0.309</td>
<td>2.817</td>
</tr>
</tbody>
</table>

a. Dependent Variable: STOCK PRICE

The application of the magnitude of the influence of the variables ROE (X1), DER (X2), and Inflation (X3) in explaining the Stock Price (Y). In the structural equation, model 2 is reflected in the value of the determinant coefficient (R²), which in this study is shown in Table 4 below:

### Table 4: Test Results of R2 Structural Equation Model 2

<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>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.149</td>
<td>.021</td>
<td>.007</td>
<td>.64204</td>
</tr>
</tbody>
</table>

Based on Table 3, it is known that the regression coefficient values for ROE, DER, and Inflation are indicated by the Unstandardized Coefficients number, where the regression coefficient for ROE is -2.192, the regression coefficient for DER is 0.233, and the regression coefficient for inflation is -0.072. The constant value of the structural equation model 2 is 0.863. Meanwhile, based on Table 4, it is known that the coefficient of determination (R²) of the structural equation model 2 is 0.021, so the residual variance value can be obtained with several e = 1- R² = 1-0.021 = 0.855. The empirical causal effect related to the ROE (X1), DER (X2), and Inflation (X3) variables on Stock Price (Y) in the structural equation model 2 can be represented through several regression equation functions as follows:

1. \( \text{Stock Price} = 0.863 - 2.192 \text{ROE} + 0.233 \text{DER} - 0.072 \text{Inflation} + 0.855e1 \)
2. \( \text{Stock Price} = 0.863 - 2.192 \text{ROE} + 0.855e1 \)
3. \( \text{Share Price} = 0.863 + 0.233 \text{DER} + 0.855e1 \)
4. \( \text{Stock Price} = 0.863 - 0.072 \text{Inflation} + 0.855e1 \)

#### Hypothesis Test

**a. Hypothesis 1**
The probability value of t sig. of 0.001 is less than the level of significant (0.05), so the decision is to accept H1, which means ROE has a positive and significant effect on inflation.

**b. Hypothesis 2**
The probability value of t sig. of 0.000 is less than the level of significant (0.05), so the decision is to accept H2, which means that DER has a positive and significant effect on inflation.

**c. Hypothesis 3**
The probability value of t sig. of 0.006 is less than the level of significant (0.05), so the decision is to accept H3, which means that ROE has a negative and significant effect on stock prices.

**d. Hypothesis 4**
The probability value of t sig. of 0.059 is greater than the level of significant (0.05), so the decision is to reject H4 because DER has a positive and not insignificant effect on stock prices.

**e. Hypothesis 5**
The probability value of t sig. of 0.002 is less than the level of significant (0.05), so the decision is to accept H5, which means that inflation has a negative and significant effect on stock prices.

**f. Hypothesis 6**
There is a significant mediating effect of inflation in mediating the effect of ROE on stock prices, so the conclusion is to accept H6, which means that inflation can mediate the effect of ROE on stock prices.

**g. Hypothesis 7**
There is a significant mediating effect of inflation in mediating the effect of DER on stock prices, so the conclusion is to accept H7, which means that inflation can mediate the effect of DER on stock prices.

#### Discussion

1. **Effect of Return on Equity on Inflation**, the acceptance of the first hypothesis (H1) in this study proves that every increase in the profitability aspect of the company represented by the ROE ratio will be followed by an increase in inflation.

2. **Effect of Debt to Equity Ratio on Inflation**, the acceptance of the second hypothesis (H2) in this study proves that for every increase in the efficiency aspect of the company represented by the DER ratio, an increase in the inflation ratio will be followed.

3. **Effect of Return on Equity on Stock Prices**, the acceptance of the third hypothesis (H3) in this study proves that for every increase in the profitability aspect of the company represented by the ROE ratio, it will have an impact on decreasing the company's stock price in the market.

4. **The Effect of Debt to Equity Ratio on Stock Prices**, the rejection of the fourth hypothesis (H4) indicates that the ability of a company related to asset efficiency alone is
not enough to be a positive signal for investors that the company is free from every risk that must be faced by management.

5. Effect of Inflation on Stock Prices the acceptance of the fifth hypothesis (H5) in this study proves that every increase in company value represented by the inflation ratio can have an impact on decreasing the company's stock price in the market.

6. Effect of Return on Equity on Stock Prices through Inflation, the sixth hypothesis (H6) is accepted. The inflation ratio is significant as a mediating variable from the effect of ROE on stock prices.

7. Effect of Debt to Equity Ratio on Stock Prices through Inflation, the seventh hypothesis (H7) is rejected, which means that the inflation ratio is not significant as a mediating variable from the effect of DER on stock prices.

Conclusion
1. The study results conclude that the first hypothesis (H1) is proven and acceptable, which means that there is a positive and significant effect of Return On Equity on Inflation, which means that the higher the profitability aspect (ROE) of issuers is. The banking sector index will cause an increase in the value of inflation, although it is not too significant. This is due to the profitability (ROE) aspect of banking, which increases when the company takes on more debt. This debt can occur because banking companies invest many funds in unproductive sectors or the long payback period, reducing shareholder equity and causing a high amount of money in circulation.

2. The results of the study conclude that the second hypothesis is proven and acceptable, which means that there is a positive and significant effect of Debt To Equity Ratio on Inflation, which means every increase in Debt To Equity Ratio of index issuers banking sector will lead to an increase in inflation. This is because banking companies take on more debt. This debt can occur because many customers experience bad loans, reducing shareholder equity and causing a high amount of money in circulation.

3. The results of the study conclude that the third hypothesis is proven and can mean that there is a negative and significant effect of Return On Equity on Inflation, which means that any increase in the Return On Equity aspect of banking index issuers will result in a decrease in stock prices.

4. The results of the study conclude that the fourth hypothesis is not proven, so it is rejected, where the Debt To Equity Ratio has a positive and insignificant effect on the Stock Price, which indicates that investors tend not to consider the Debt To Equity Ratio aspect of the issuer - issuers of the banking sector index as one of the fundamental factors that can reduce stock prices if measurements of other aspects do not support it.

5. The results of the study conclude that the fifth hypothesis is proven and acceptable, which means that there is a negative and significant effect of Inflation on Stock Prices, which means that any increase in the value of inflation from issuers of the sectoral banking index will have an impact on decreasing stock prices in the capital market.

6. The study results conclude that the sixth hypothesis is proven and acceptable, which means that inflation can mediate the effect of Return on Equity on stock prices, which means the higher the profitability (ROE) aspect of the issuers. The issuer of the banking sector index, the higher the value of inflation, which impacts the decline in stock prices in the capital market.

7. The results of the study conclude that the seventh hypothesis (H7) is not proven, so it is rejected, where inflation is not able to mediate the effect of the Debt to Equity Ratio on stock prices which indicates that there are several issuers in the sectoral banking index with problems in terms of the efficiency of the company's assets so that ultimately investors tend to consider other aspects of the company's fundamentals which do not only show how much the company's total net sales are.

Suggestion
1. It is recommended to add other variables that can affect the stock price or by changing the ratios used as a proxy for the company's fundamental and technical aspects.

2. It is recommended to be able to expand or replace the object of research from various sectoral indices listed on the IDX and increase the research period so that it will be better able to explain the influence of each research variable on stock prices.

3. It is recommended to be able to expand or replace the object of research to distinguish banking companies that can transform in the industrial era 4.0 as a renewal in a study.

References


