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The Effect of Macroeconomic Factors and Profitability on State-Owned Companies' Stock Return: Evidence from Indonesia Stock Exchange

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Abstract

This study examines the effect of inflation, exchange rates, interest rates, earnings per Share (EPS), and return on assets (ROA) on stock returns in State-Owned Companies listed on the Indonesia Stock Exchange (IDX) in 2016-2020. This study is analysed using panel data regression. The independent variables are Inflation, Exchange Rates, Interest Rates, earnings per share (EPS), and Return on Assets (ROA), and stock return is a dependent variable. With 25 companies, the data were collected using purposive sampling and 24 companies were obtained as a sample from 2016 to 2020. The type of data used is secondary data. This study concludes that inflation, exchange, and interest rates significantly impact State-Owned Companies' stock return. Besides that, Earnings per Share and return on assets do not substantially affect State-Owned Companies' stock returns. This study recommends that companies provide financial information that is objective and relevant and can be tested for validity to convince investors to make decisions to invest in the company. Companies need to improve their performance so that investors are interested in investing in the company. Also, when making investment decisions, investors pay attention to macroeconomic factors, profitability, and other factors such as fundamental and market factors. Fundamental factors are factors related to the performance of the issuer company. Meanwhile, market factors are related to the performance of its shares.

1. Introduction

Stock return is the investors' goal; return is the profit obtained after investors invest their capital in a certain security. Every investment activity, either in a short period of time or in a long period of time, still expects a return on the capital that has been given, whether the profit is obtained directly or indirectly. According to Fahmi (2014), stock returns are the profits obtained by companies, individuals, and institutions from the results of their investment policies. In the investment world, it is known that there is a strong relationship between risk and return. If the risk is high, the return (profit) will also be high, and vice versa. The risk will also be low if the return is low (Setyaningrum & Muljono, 2016). Robert Sand Daniel (2009) macroeconomics is an economic science that deals with economic aggregate variables, such as inflation. Macroeconomic factors are a branch of economics studied more thoroughly (aggregate), and three factors affect stock returns: inflation, exchange rates, and interest rates. Meanwhile, profitability is a ratio related to the issuer company's and shares' performance. The company's performance and the stock's performance are earnings per share of the company and Return on Assets.

Inflation is a condition of continuously increasing the prices of goods or constantly decreasing the value of money because an increase does not match the increase in the amount of money in circulation in the supply of goods. According to Haryani and Priantinah (2018), inflation significantly negatively affects stock returns. High inflation will decrease stock prices because it causes the price of goods in general due to higher demand to meet the community's needs, so production costs are higher and can affect income or sales. The exchange rate is a comparison between the price of one country's currency with another country's currency. Karim (2016) states that the exchange rate significantly negatively affects stock returns. Unstable exchange rate fluctuations will reduce the level of confidence of foreign investors in the Indonesian economy. This will certainly have a negative impact on stock trading in the capital market, and foreign investors will tend to withdraw capital, resulting in Capital of Flow, which will impact declining stock prices. If the stock price decreases, this will result in the level of return that will be distributed also decreasing.

Interest rate is the amount of interest paid per unit of time. In other words, society must pay for the opportunity to borrow money. Pohan (2008) says that high interest rates, on the one hand, will increase people's desire to save so that the amount of bank funds will increase. Meanwhile, on the other hand, high interest rates will increase the costs incurred by the business world, resulting in a decrease in domestic production activities. The decline in production will also reduce the business world's need for funds. This resulted in a decrease in demand for bank credit, so the problem was where the funds would be channelled in conditions of high interest rates. Return on Assets (ROA) is the ratio between Net Income After Tax to overall assets, which shows a measure of asset productivity in providing returns on investment. According to Haryani and Priantinah (2018), ROA positively affects stock returns significantly.

2. Literature Review

2.1 Capital Market

The capital market can be defined as a market that trades securities with a lifespan of more than one year, such as stocks and bonds traded on the Indonesia Stock Exchange. The capital market brings together two groups of mutually interested parties: prospective investors (investors) and companies (issuers) needing medium- or long-term funds. In other words, the capital market is a meeting place for supply and demand for medium-term or long-term funds. The capital market is an alternative investment for people who want to invest their money, and the capital market can also be a means of long-term funding for companies to get additional capital (Chalimah & Witiastuti, 2020). Wijaya et al. (2021) state that the capital market is a source of capital or funding that supports economic business programs that aim to meet the needs of individuals, governments, investors and companies. Meanwhile, according to Situmorang in Handayani and Zulyanti (2018), the capital market is a market that is a liaison between fund owners (investors) and fund users (issuers).

2.2. Stock Return

Return is the profit companies, individuals, and institutions obtain from their investment policies' results. In the investment world, it is known that there is a strong relationship between risk and return, that is, if the risk is high, the return (profit) will also be high, and vice versa if the return is low, the risk will also be low (Septiana et al., 2022). According to Liu et al. (2009), stock returns are the investment results. Generally, investing is to get a rate of return from funds invested in their willingness to bear the risks involved in the investment. Stock returns are the main reason for investing in stocks. Meanwhile, according to Farkhan and Ika (2012), stock return can be interpreted as the rate of return of profits investors enjoy on an investment. The calculation of stock returns in this study uses realised returns (actual returns), namely by calculating the difference in individual share prices for the current period with the previous one by ignoring dividends. Stock returns are the rate of return that investors can get when investing. Investors can benefit and suffer losses from these investments. In addition to obtaining profits, investors must also be prepared to take risks.

2.3. Inflation

According to Islam (2013), inflation is a tendency to increase the price of products. High inflation reduces the level of real income that investors get from investing. On the other hand, if a country's inflation rate decreases, this is a positive signal for investors as the risk of purchasing power of money decreases and the risk of real income declines. Modigliani and Cohn (1979) state that inflation is the tendency of prices to rise continuously or can be interpreted as a decrease in the value of money, the higher the price increases, the lower the value. Very high inflation can disrupt the economy in general because reducing purchasing power due to a decline in currency values can also increase the risk of a decline in people's real income.

Inflation significantly impacts stock returns, particularly in state-owned companies, where government policies and macroeconomic factors are critical. Research shows that inflation generally has a negative effect on the profitability and stock returns of state-owned companies, especially in the banking sector, as observed in Indonesian state-owned banks from 2012 to 2017. In these banks, inflation negatively affected Return on Assets (ROA), lowering stock prices (Artha &

Mulyana, 2018). Similar trends are evident in other sectors. For instance, in consumer goods industries, inflation strengthens the negative effects of certain financial ratios on stock returns, indicating that higher inflation worsens the leverage situation for state-owned companies, ultimately reducing their stock returns (Rasyad et al., 2020).

In contrast, studies in Brazil indicate that stock returns can act as a hedge against high inflation but fail to protect investors during periods of low inflation, a dynamic relevant to state-owned enterprises in emerging markets (Choudhry & Pimentel, 2010). Ultimately, while state-owned companies are highly exposed to inflationary pressures due to their links to macroeconomic policies, the exact impact of inflation on stock returns varies with factors like sector, financial structure, and the inflationary environment. CPI = consumer price index period t CPI-1 = consumer price index period t-1

2.5. Exchange Rate

The currency exchange rate, often called the exchange rate, is a currency's price against other currencies. The exchange rate is one of the most important prices in an open economy, given its huge influence on the current account balance and other macroeconomic variables. Dwita and Rahmidani (2012) state that the exchange rate shows the price or value of a country's foreign currency expressed in the value of another country's currency. The currency associated is generally the currency of the countries with the most trade relations. The value of the tethered currency does not fluctuate freely but only fluctuates according to the currency to which it is linked.

2.6. Interest Rate

Interest rate is the amount of interest paid per unit of time. In other words, society must pay for the opportunity to borrow money. The cost to borrow money is measured in Rupiah or Dollars per year for each Rupiah or Dollar borrowed is the Interest Rate. Prah and Tenakwah (2017) explained that the interest rate is the price of borrowing. The interest rate is expressed as a percentage of the principal per unit of time. Pohan (2008) said that high interest rates will increase people's desire to save so that the amount of banking funds will increase. Kasmir (2008) states that bank interest is a reward banks provide to customers who buy or sell their products based on conventional principles. Interest can also be interpreted as the price that must be paid to customers (who have deposits) with those that customers must pay to the bank (customers who obtain loans).

2.7. Earnings Per Share

Earnings per share is one of the market ratios, which is the result of income that shareholders receive for each share they own for participation in the company. The increase in earnings per share means that its growth or financial condition is experiencing an increase in sales and profits; in other words, the greater earnings per share indicates the company's ability to generate net profits per Share (Arista & Astohar, 2012). According to Fahmi (2012), earnings per share (income per share) is a form of giving benefits to shareholders from each share owned. According to Febrioni et al. (2016), Earning Per Share (EPS), also known as earnings per share, is a market prospect ratio that measures the net income earned per share from outstanding shares. Earnings Per share is a market ratio that measures management's ability to create market value beyond investment spending. The increase in EPS means the company is growing. The financial condition is improving both in terms of increasing sales and profits. The greater EPS indicates the company's ability to generate net profits per Share (Handayani & Zulyanti, 2018).

2.8. Return on Asset

Return on assets (ROA) is one of the profitability ratios, which shows how effectively the company operates in generating profits or company profits. According to Febrioni et al. (2016), return on assets is a profitability ratio intended to measure the company's ability to cover the overall funds invested in its operating activities to generate profits by utilising its assets. Based on the opinion of Choiriyah et al. (2020), Return on Assets measures the company's ability to generate net income based on a certain level of assets. A high ratio indicates the efficiency and effectiveness of asset management, which means the better. According to Fahmi (2012), ROA sees the extent to which the investment that has been invested can provide a profit return as expected. The investment is the same as the company's assets that are invested in or placed. The formula for calculating Return on Assets is as follows: Based on the above understanding, it can be concluded that ROA is a ratio used to measure the company's ability to earn a profit or profit.

2.9. Hypothesis

The hypothesis is a temporary answer to the research problem formulation, where the research problem formulation has been stated in the form of a question sentence (Sugiyono, 2013). Based on the formulation of the problem above, the researchers formulated the following hypothesis:

H1: Inflation has a significant negative effect on the stock returns of state-owned companies.

H2: Exchange rate significantly negatively affects stock returns in state-owned companies.

H3 : Interest rates significantly negatively affect state-owned companies' stock returns.

H4: Earning Per Share (EPS) has a significant positive effect on stock returns in state-owned companies.

H5: Return on Assets (ROA) has a significant positive effect on stock returns in state-owned companies.

3. Materials and Methods

According to Sugiyono (2013), the population is a generalised area consisting of objects and subjects with certain qualities and characteristics that researchers apply to study and then draw conclusions. The population of this study is 25 shares of state-owned companies listed on the Indonesia Stock Exchange in 2016-2020. The sample is part of the population subject under study, representing the entire population. According to Boediono (2011), the sample is part or representative of the studied population. The sample in this study only amounted to 24 samples from 25 companies. The sample used was determined by a purposive sampling method, namely the determination of the sample by first determining the desired criteria from the sample for research determination. The criteria set out in this study are:

a. State-owned companies listed on the Indonesia Stock Exchange during the 2016-2020.
b. The data needed during the research period 2016-2020 is available.
c. The company was still operating during the research period.

3.1. Data Collection Technique

In accordance with the type of data used in this study, namely the type of secondary data, the data collection technique carried out in this study was documentation. In this study, the research used data collection methods that were the problems studied. The data collection technique used in this research is the documentation study method. The documentation method is collecting information from evidence and research objects.

3.2. Panel Data Regression

This panel data regression test was conducted to determine the relationship between the independent variables, namely inflation, exchange rates, interest rates, Earning Per Share (EPS), and Return on Assets (ROA), on the dependent variable, namely Stock Returns in state-owned government companies listed on the Stock Exchange. Indonesia. The general form of panel data regression modeling is:

LnReturnit = α+ β1Inflation + β2LnExchange rate + β3Interest rate + β4LnEPS + β5ROA + e

Where, α = constant, i = time, t = firm, e = error term

3.2.1. Chow Test

The fixed effect significant test (F test) or Chow test determines whether the panel data regression technique with fixed effects is better than panel data without dummy variables or OLS. The F test statistics are as follows:

$$C = \frac{(RRSS - URSS)/(N-1)}{URSS/(NT - N - K)}$$

Where RRSS is Restricted Residual Sum Square, the number of squared errors is obtained from the panel data estimation using the pooled least square method. URSS is Unrestricted Residual Sum Square, the number of squared errors obtained using the fixed effect method from the panel data estimation. N: Total cross-section data T: Total time series data K: Number of explanatory variables

3.2.2. Hausman Test

The Hausman test can be defined as statistical testing that chooses whether the fixed effect or random effect model is most appropriate. Hausman testing is carried out with the hypothesis H0 = random effect model and H1 = fixed effect model. The Hausman test statistic follows a chi-square statistical distribution with k degrees of freedom, where k is the number of independent variables. If Hausman's probability value is < = 0.05, Ho is rejected, and the correct model is the fixed effect model. On the other hand, if the Hausman probability value > = 0.05, Ho is accepted, so the appropriate model used is the random effect model. The random effect model estimates panel data in which the disturbance variables may be interrelated over time and between individuals. In the random effect model, the intercept difference is accommodated by each company's error terms. At the same time, the fixed effect model assumes that there are differences between individuals.

3.3. Hypothesis testing

This test was conducted to determine the relationship of the independent variables, namely inflation, exchange rates, interest rates, Earning Per Share (EPS), and Return on Assets (ROA) on the dependent variable of stock returns partially with the hypothesis on BUMN companies on the Indonesia Stock Exchange. The criterion for decision-making is to compare the probability value with a significant value of a = 5%. The criteria used are:

1. t-stat with probability > a = 5%, meaning that inflation, exchange rates, interest rates, Earning Per

Share (EPS), and Return on Assets (ROA) are not partially related to stock returns in state-owned companies listed on the IDX.

2. t-stat with probability < a = 5%, it means that inflation, exchange rate, interest rate, Earning Per Share (EPS), and Return on Assets (ROA) are partially related to stock returns in state-owned companies listed on the IDX.

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4. Results and Discussion

To estimate panel data parameters, there are three techniques offered, namely, Common Effect Model (CEM), Fixed Effect Model (FEM) and Random Effect Model (REM). Based on the Chow test results, the chi-square line's probability value is 0.3523. This value is above the alpha error value of 0.05. Therefore, the best model is the Common Effect Model (CEM). Hence, the panel data regression equations in this study are as follows:

Stock Return = -794.5337 + 1.884743 INFLATION + 83.65991 EXCHANGE RATE – 1.590098 INTEREST RATE + 0.093519EPS + 0.030420ROA

On the basis of the above equation, it indicates that the constant value is -794.5337, which indicates that if Inflation, Exchange Rate, Interest Rate, EPS and ROA are 0, then stock returns will remain constant with a value of -794.5337. Inflation positively affects stock returns with a regression coefficient of 1.884743. This shows that if inflation is increased by 1%, the stock return will increase by 1.884743%. The exchange rate positively affects stock returns with a regression coefficient of 83,65991. This shows that if the Exchange Rate is added by 1%, the stock return will increase by 83.65991%. Interest rates have a negative effect on stock returns with a regression coefficient of 1.590098. This shows that if the interest rate is increased by 1%, the stock return will decrease by 1.590098%. EPS has a negative effect on stock returns with a regression coefficient of - 0.093519. This shows that if EPS is increased by 1%, the stock return will decrease by -0.093519%. ROA positively affects stock returns with a regression coefficient of 0.030420. This shows that if ROA is added by 1%, the stock return will increase by 0.030420 %.

Table 1. Result of Hypothesis Testing

Variable(s)	Coefficient	t-stat	Sig.
Intercept	-794.5337		
Inflation	1.884743	4.410043	0.000
Exchange Rate	83.65991	- 4.261246	0.000
Interest Rate	1.590098	- 4.349750	0.000
Earnings Per Share	0.093519	- 1.514894	0.132
Return on Asset	0.030420	1.065555	0.288

Table 1 shows the t-stat inflation value is 4.410043 with a significant value of 0.000. The value of the t-table in this study with df=120-5 at an error level of 0.05 is 1.6582. Therefore, t-stat (4.410043) > t-table (1.6582) and the significance value (0.000) <0.05, thus, the proposed hypothesis (H1) is accepted. It means that inflation has a significant effect on stock returns. Also, the t-stat for the exchange rate is - 4.261246, with a significant value of 0.000. The t-table value in this study with df = 120-5 at an error level of 0.05 resulted in a figure of 1.6582. Therefore, t-stat (4.261246) > t-table (1.6582) and the significance value (0.000) <0.05, so H2 is accepted, which means that the exchange rate has a significant effect on stock returns.

Then, the interest rate t-stat is - 4.349750, with a significant value of 0.000. The t-table value in this study with df = 120-5 at an error level of 0.05 is 1.6582. Therefore, t-stat (-4.349750) < t-table (1.6582) and significance value (0.000) <0.05. Thus, H3 is accepted, which means that interest rates have a significant effect on stock returns. The t-stat of EPS value is - 1.514894 with a significance value of 0.1326. The t-table value in this study with df = 120-5 at an error level of 0.05 resulted in a figure of 1.6582. Therefore, t-stat (-1.514894) < t-table (1.6582) and the significance value (0.1326) > 0.05, so H4 is rejected, which means that EPS has no significant effect on stock returns. Besides that, the ROA t-stat is 1.065555, with a significant value of 0.2889. The t-table value in this study with df = 120-5 at an error level of 0.05 resulted in a figure of 1.6582. Therefore, t-stat (1.065555) < t-table (1.6582) and significant value (0.2889) > 0.05, so H5 is rejected, which means ROA has no significant effect on stock returns.

5. Conclusions

This study concludes that inflation, exchange rate, and interest rate significantly impact State-Owned Companies' stock return. Besides that, earnings per share and return on assets do not impact substantially State-Owned Companies' stock returns. This study recommends that companies provide financial information that is objective and relevant and can be tested for validity to convince investors to make decisions to invest in the company. Companies need to improve their performance so that investors are interested in investing in the company. Also, when making investment decisions, investors pay attention to macroeconomic factors, profitability, and other factors such as fundamental and market factors. Fundamental factors are factors related to the performance of the issuer company. Meanwhile, market factors are related to the performance of its shares. Academicians must further study the factors affecting stock returns with different objects and locations. Further researchers need to add other independent variables because other variables not included in this study may strongly affect stock returns.

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