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Article

Impact of Macroeconomic Conditions on Stock Returns: Empirical Evidence from Indonesia

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Abstract: This study aims to "test" the effect of Exchange, Interest Rates, and Inflation on Stock Returns. The approach used in this research is a quantitative approach. The population in this study are manufacturing companies in the food and beverage sector which are listed on the Indonesia Stock Exchange. The sampling technique used was the purposive sampling method. The sample in this study was 54 companies listed on the Indonesian Stock Exchange in 2018 - 2020. The data used in this study is secondary data taken from the Indonesia Stock Exchange. The data analysis used in the initial study was Eviews version 9 with the aim of testing Exchange Rate (X1), Interest Rate (X2), and Inflation (X3) against Stock Return (Y). The results of this study indicate that simultaneously there is a significant effect between exchange rates, interest rates, and inflation on stock returns. While x partially Exchange Rate and Inflation have no negative significant effect on stock returns. While Interest Rates partially have a positive significant effect on Stock Return.

Keywords: Exchange, Interest Rates, Inflation

1. Introduction

Stocks are the investment vehicle of choice for many investors as they are considered an attractive and easily tradable asset. However, investing in stocks also involves various risks and uncertainties that are difficult for investors and potential investors to predict. This is due to fluctuations in stock prices, which rise and fall rapidly. Therefore, investors use a wide variety of information to predict risk and uncertainty. Stock prices can also be affected by macroeconomic factors, with positive or negative changes in macroeconomic conditions having an impact on stock market movements in Indonesia.

Stock return is the return value obtained as a result of investment. Expected returns will be in the form of dividends on equity investments and interest income on investments in debt securities. Return is the main goal of investors to obtain results from investments made by investors. With a relatively high rate of return on equity, it is increasingly attractive for investors to buy shares. Therefore, to find out how much return investors will get, investors and potential investors must predict how much return they will get. (Hartono & Jogiyanto, 2010).

Indonesia has experienced a serious economic crisis since the end of 2019 until now. This is due to the outbreak of the COVID-19 virus. Several food and beverage sub-sector companies experienced a decrease in stock returns which had an impact on the decline in equity income, including the company PT Fast Food Indonesia TBK, which is a worsening

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economic situation accompanied by a 25.4% decrease in revenue from 3.37 trillion to 2.5 trillion. A similar case occurred at PT Indofood CBP Sukses Makmur Tbk (ICBP), a food and beverage company that produces indomie, with the price per share dropping by 1.85% with a price per share of Rp 9,300. large transactions up to Rp 171.08 billion until the number of trades reached 18.23 million shares. These cases show that lower returns or lower share prices have resulted in lower returns or profits generated by businesses and investors.

One of the factors influencing stock returns is the exchange rate, which is the relationship between a country's currency and another country's currency. The rise and fall of currency exchange rates can also affect market value and local market activity. For investors, a weakening rupiah indicates weakening fundamentals in Indonesia. As a result, investors assume that investing in stocks has a high level of risk. The economic situation of a country affects the exchange rate, so exchange rate stability is needed to create a conducive business climate and improve the business world. In research conducted by (Pervaiz, J., & Masih, J. 2018), (Firmansyah, M. 2015), and (Rosiana et al., 2017) which states that the exchange rate has a significant effect on stock returns. Meanwhile, in research (Mardiyanto, B. B. D., & Poerwati, R. T., 2022) which states that the exchange rate variable has no effect on stock returns.

The second factor that affects stock returns is interest rates, which is the consideration or value paid by the borrower to the lender for funds or money. Interest rates are generally expressed as a percentage. An increase in interest rates affects the increase in interest expense and cost of capital, and therefore, affects the decrease in profitability of the company. A decrease in company profits will reduce stock profitability and is predicted by a decrease in stock prices (Riantani, S., & Tambunan, M. 2013). In research (Hidayat L. R., Setyadi., & Azis, M. 2018) and (Satria et al., 2016), which states that interest rates have a significant positive effect on stock returns, it can be concluded that if there is an increase in interest rates, there will be an increase in stock returns. Meanwhile, in research (Fabiola, A., & Iradianty, A. 2021) which states that there is no effect of interest rates on stock returns. The rise and fall of interest rates does not affect investors to invest in the capital market. When interest rates decrease, investors will continue to invest or buy stocks that can provide optimal stock return values.

The third factor that affects stock returns is inflation, which is an increase in the general price of goods that continues for a certain period of time and can affect the economic situation of a country. Inflation occurs because the price of goods rises, which can reduce the value of the currency. And it can lead to a decrease in consumer purchasing power and reduce corporate profits, including returns on equity. High inflation will certainly put pressure on interest rates which are expected to reduce the inflation rate. However, a high interest rate is detrimental to entrepreneurs because it can increase operating costs, so the stability of the interest rate also determines the rise and fall of the company's share price, including the rate of return. In research conducted by (Larissa, Cheria Sofie, E. S. D., & Wijaya, T 2014) and (Asri, I. G. A. A. Y., & Suwarta, I. K. 2014), where the results of the study state that the inflation rate has a significant effect on stock returns. Meanwhile, the same research conducted by (Jalil, M., Sari, N. Y., & Susanti, N. 2021) shows that inflation has no effect on stock returns. This means that inflation is not a variable that needs to be considered when investing in stocks. High inflation results in a decrease in people's purchasing power. Inflation that is too high can also result in a decrease in investors' real income from their investment.

The purpose of this research is to understand the impact of macroeconomic variables on stock returns. This study is crucial as it provides important information for entrepreneurs, investors, and policymakers. The research contributes significantly to the business world by providing additional knowledge about the macroeconomic impact on stocks.

Theoretical Framework

Exchange Rates

The form of exchange rate itself is the virtual value of a country's money that can be exchanged for another country's currency. This currency exchange is known as a forex transaction. If the foreign exchange rate increases, the value of the domestic currency will inevitably fall so that the price of raw stocks and imported goods will rise which causes higher production costs, and company profits will decrease. The fall in corporate profits causes the company's share price to fall. This indicates that an increase in the foreign exchange rate will reduce the company's stock return (Robiyanto, R. (2018) & Yunita, Y. & Robiyanto, R. (2018)).

Exchange rate changes affect company activity income and expenses, causing changes in stock returns. However, the portfolio balance approach assumes a negative relationship between exchange rates and stock returns. Domestic currency depreciation can boost exports. If international market demand is elastic enough, cash flow for domestic companies will increase, but if issuers purchase foreign goods and hold dollar-denominated debt, stock prices and equity returns will decrease.

Interest Rates

Interest rates are a measure of a country's economic activity that affects investment cash flows and currency movements. According to (Budiono, 2017), interest rates are the price of investment funds usage. Interest rates are defined as borrowing costs. They are also used as a discount rate for discounting future cash flows of financial assets. Interest rate increases cause stock price declines as required stock returns rise, leading to stock price drops (Lobo, 2000).

Higher interest rates can increase interest expenses and capital costs, reducing company profits. This decrease in income reduces stock profit margins as market price expectations drop. On the other hand, lower interest rates encourage people to invest in the stock market, influencing higher stock returns. Investing in stocks with high-interest rates is unlikely to increase profits. However, when interest rates decrease, investors tend to invest in stocks with yield options in the stock market.

Inflation

Inflation is a general and continuous increase in the price of goods. If the price of goods rises, it will automatically affect the production process of manufacturing companies because the price of raw materials also rises. High production costs will affect selling prices which will also reduce people's purchasing power (Suharyanto, S., & Zaki, A. 2021). Inflation also causes a decrease in the purchasing power of money (Angelina & Nugraha, 2020). If purchasing power decreases, the income of the community, including investors, will decrease, which has an impact on reducing the desire to invest (Hiya, N., Hasyim, Muda, Soemitra, 2021).

Rising inflation is also considered bad news by investors as it represents poor economic conditions in the country. Therefore, investors are less confident about their investment in the stock market. If there is a decrease in the inflation rate, it represents good economic conditions and attracts investors to invest in the stock market (Khan, et al., 2012).

Inflation can increase company income and costs. According to Kewal, S. S. (2012), if the increase in production costs is greater than the increase in prices that the company can benefit from, the company's profitability will decline. When a company's profits are low, investors are reluctant to invest in that company, leading to a decrease in stock prices, which ultimately affects the stock returns obtained by an investor.

2. Materials and Methods

The population is the entirety of elements that will be the subject of generalization. Population elements are the total subjects to be measured, representing the units studied. In this research, the population consists of 26 food and beverage companies listed on the Indonesia Stock Exchange (IDX) during the period from 2018 to 2020. A sample is a part of the total amount and characteristics possessed by the population. The sampling technique used in this research is the purposive sampling method, where samples are selected based on specific considerations or criteria.

The criteria used by the researchers are as follows:

1. Companies that did not report profits during the research period of 2018 – 2020.
2. Companies that do not have complete data required for research in the years 2018 – 2020.

Based on the criteria above, the sample obtained and used for this research consists of 26 food and beverage companies. Table 1 Criteria for Sampling.

The data analysis technique used in this study employs several analysis methods as measurement tools. The researcher uses data analysis techniques with the help of EViews software. This research uses multiple linear regression data analysis techniques to determine the influence of exchange rates, interest rates, and inflation on stock returns. Subsequently, the data will be processed using EViews software.

To test whether the independent variables (Exchange Rate, Interest Rate, and Inflation) have a significant partial impact on the dependent variable, the test is conducted in both two-way and one-way directions. This is to determine whether the independent variables partially have a significant influence on the dependent variable. Statistically, this can be measured by the t-statistic value and it's coefficient of determination. Hypothesis Decision Making:

1. If the significant t-value < 0.05, then Ho is rejected, and Ha is accepted, meaning the model has a significant influence.
2. If the significant t-value > 0.05, then Ho is accepted, and Ha is rejected, meaning the model has no significant influence.

3. Results

Descriptive Statistics

Descriptive analysis is a form of data analysis used to test the generalization of research results from a sample (U. Sekaran & R. Bougie, 2017). Descriptive statistical analysis is used to provide a general overview of the data used. In this table, the descriptive statistical measurements were conducted in the study of exchange rate (X1), interest rate (X2), and inflation (X3) as independent variables, and stock return (Y) as the dependent variable. The information displayed in the descriptive analysis includes an overview of the sample used in the research viewed from the mean, median, maximum, minimum, and standard deviation.

Based on Table 2, the results of the Descriptive Statistical Test show that the sample used in this study consists of 54 samples observed during the 2018-2020 period:

1. Exchange Rate (X1) From the sample data of 18 manufacturing companies in the food and beverage sector listed on the Indonesia Stock Exchange during the 2018–2020 period, the highest value (maximum) was 14,481.00 in 2018, and the lowest value (minimum) was 14,101.50 in 2019, with a mean (average) value of 14,229 and a standard deviation of 179.8683. This indicates that the mean is higher than the standard deviation, which is considered favorable as the deviation (standard deviation) is smaller than the mean.
2. Interest Rate (X2): From the sample data, the highest value (maximum) was 5.25 in 2018, and the lowest value (minimum) was 3.75 in 2020, with a mean value of 4.7083 and a standard deviation of 0.64449. This indicates that the mean is higher

than the standard deviation, which is considered favorable as the deviation (standard deviation) is smaller than the mean.

3. The inflation variable (X3) from the sample data of 18 manufacturing companies in the food and beverage sector listed on the Indonesia Stock Exchange during the period 2018 – 2020 had the highest (maximum) value of 0.031300 in 2018 and the lowest (minimum) value of 0.016800 in 2020, with a mean (average) value of 0.025100 and a standard deviation of 0.006160. Therefore, the mean value is higher than the standard deviation value. This indicates a favorable condition because the data deviation, represented by the standard deviation, is smaller than the mean value.

Results of Classical Assumption Tests

1. Normality Test

   The normality test aims to determine whether the disturbance variables or residuals in the regression model are normally distributed. A regression equation is considered good if it has variables and dependent variables that are normally distributed or approximately normal with a significance greater than 0.05.

   According to Table 3, the results of the Normality Test indicate that the probability value obtained using the histogram-normality test is 0.217630, which is greater than 0.05. Therefore, it can be concluded that the normality test is normally distributed, meaning that the classical assumption of normality has been met.

2. Multicollinearity Test

   The multicollinearity test is necessary for regression using more than one independent variable. It is used to determine whether there is a perfect or near-perfect linear relationship between the independent variables in the linear regression model.

   Based on Table 4, the Multicollinearity Test results show that there are no independent variables with a tolerance value of less than 0.10, indicating that there is no correlation between independent variables greater than 95%. The calculation of the Variance Inflation Factor (VIF) shows that the Exchange Rate variable has a VIF value of 1.035252, the Interest Rate variable has a VIF value of 1.018064, and the Inflation variable has a VIF value of 1.019913. All three variables have VIF values of less than 10, indicating that the regression model used does not experience multicollinearity.

3. Heteroscedasticity Test

   The heteroscedasticity test aims to determine whether there is a difference in variance from one residual observation to another in the regression model. To determine whether there is a heteroscedasticity problem in this study, the White heteroscedasticity test without cross-terms was conducted. If the significance probability is less than 0.05, the model is considered to have heteroscedasticity. Conversely, if the significance probability is greater than 0.05, the model does not have heteroscedasticity.

   Based on Table 5, the Heteroscedasticity Test results show that the significance probability value is 0.8573, which is greater than 0.05. It can be concluded that the data in these variables do not exhibit heteroscedasticity.

4. Autocorrelation Test

   To detect whether there is autocorrelation in the model regarding the independent variables and the dependent variable, it can be seen that if the significant value of the probability is less than 0.05, the model experiences autocorrelation. However, if the significant value of the probability is greater than 0.05, the model does not experience autocorrelation. In this study, the Durbin-

Watson test was conducted, which is commonly used to determine the presence of positive or negative autocorrelation.

In Table 6, the Autocorrelation Decision results show that the Durbin-Watson (DW-Test) value is 1.988243, where the value du < d < 4-du, with the value dU of 1.6800 and 4-dU of 2.3200, thus 1.988243 < 1.6800 < 2.3200. It can be concluded that the model is free from autocorrelation, based on the Breusch-Godfrey serial correlation LM, indicating no autocorrelation problem.

Multiple Linear Regression Results

1. Model Testing with Chow Test

   Based on Table 7, the Chow Test results indicate that the probability of cross-section chi-square is 0.9686, which is greater than alpha (0.05). It can be concluded that the common effect model is more appropriate than the fixed effect model.

2. Model Testing with Lagrange Multiplier Test

   In the Lagrange multiplier test, the aim is to determine and choose which estimation model is better between the common effect (Pooled Least Square) or the random effect.

   H0 = Model Common Effect , Ha = Model Random Effect

   Pagan value is 0.0000, which is smaller than 0.05, meaning that the random effect model is more suitable than the common effect model.

Hypothesis Testing

1. Partial Test (T-Test)

   The t-statistic test indicates how much an individual independent variable can explain the variation in the dependent variable. The testing criteria are based on the T-statistic probability value. If it is less than alpha (0.05), then Ho is rejected, and Ha is accepted, indicating the model has a significant effect. However, if the T-statistic probability value is greater than alpha (0.05), then Ho is accepted, and Ha is rejected, indicating the model does not have a significant effect.

   Based on Table 9, the Partial Test results can be explained as follows:

   a. Based on the t-test data table above, the t-statistic probability value of the Exchange Rate variable (X1) is 0.000571, which is less than the t-table value of 1.67591 at a significance level of 0.05; therefore, the probability value is 0.3975 > 0.05. Thus, it can be concluded that H1 is rejected and H0 is accepted, meaning there is no partial effect of the Exchange Rate on Stock Returns.
   b. Based on the t-test data table above, the t-statistic probability value of the Interest Rate variable (X2) is 538.4638, which is greater than the t-table value of 1.67591 at a significance level of 0.05; therefore, the probability value is 0.0076 < 0.05. Thus, it can be concluded that H2 is accepted and H0 is rejected, meaning there is a partial effect of the Interest Rate on Stock Returns.
   c. Based on the t-test data table above, the t-statistic value for the Inflation variable (X3) is 317.9986 > t-table value 1.67591 with a significance level of 0.05, so the probability value 235.6987 > 0.05. Thus, in this study, it can be concluded that H3 is rejected and H0 is accepted, meaning that there is no partial effect of Inflation on Stock Returns.

4. Discussion

The effect of exchange rates on stock returns

In the first hypothesis (H1), it is stated that exchange rates do not have a significant negative effect on stock returns. From Table 4.15, it can be seen that the results of this study show that the exchange rate variable has a significant value of 0.3975 > 0.05 and a t-statistic

value of 0.853435, meaning that exchange rates do not have a significant negative effect on stock returns. Therefore, it can be concluded that H1 is rejected (significant) and H0 is accepted (not significant).

In the study conducted by R. Setyaningrum & Muljono (2016), exchange rates are considered in the short-term financial markets, while stock returns are in the long-term capital markets, i.e., stock trading. They found that exchange rates do not affect returns. Both exchange rates and stock prices are fluctuating, and there is no institution that regulates or controls them (M. Lestari, 2005). Exchange rate fluctuations directly impact the profitability of international market transactions, as well as export sales and company prices (B. Fortuna, 2016). Unstable exchange rate fluctuations can affect investor confidence in the Indonesian economy, especially foreign investors. This can negatively impact foreign investors who may withdraw their capital at any time, whether for short-term or long-term investments. Another factor that investors may analyze before investing is to consider investment risks. Investment risk is assessed by evaluating company performance and realizing expected returns. Foreign investors convert their returns on stocks into their home currency. Al-Andallah, S.Y., & Aljarayesh, N. I. (2017) note that zero exchange rates result in lower returns when converted to other currencies, which disappoints foreign investors.

The effect of interest rates on stock returns

In the second hypothesis (H2), it is stated that there is a significant positive effect on stock returns. From Table 4.15, it can be seen that the results of this study show that the interest rate variable has a significant value of 0.0076 < 0.05 and a t-statistic value of 2.784030, indicating that interest rates have a significant positive effect on stock returns. Therefore, it can be concluded that H2 is accepted (significant) and H0 is rejected (not significant).

This study is consistent with the theory that changes in interest rates can affect the volatility of investment returns (Tandelilin & Eduardus, 2010). When interest rates rise, stock prices fall, and when interest rates fall, stock prices rise. Along with an increase in interest rates, the return on interest-rate-related investments also increases. High interest rates affect the present value of a company's cash flows and make investments less attractive. Consequently, investors may choose not to invest as it is considered unappealing, leading to a decrease in stock returns. Therefore, both high and low interest rates affect stock returns (I.M. August 2021). An increase in interest rates raises business costs, which ultimately reduces returns. Conversely, a decrease in interest rates sends a positive signal to the stock market and stock returns, which will eventually increase as well (Ahmad, M. I., Rehman, R., & Raoof A. 2010).

The effect of inflation on stock returns

In the third hypothesis (H3), it is stated that inflation does not have a significant negative effect on stock returns. From Table 4.15, it can be seen that the results of this study show that the inflation variable has a significant value of 0.1834 > 0.05 and a t-statistic value of 1.349174, meaning that inflation does not have a significant negative effect on stock returns. Therefore, it can be concluded that H3 is rejected (significant) and H0 is accepted (not significant). According to a study by Putra et al. (2016), inflation of less than 10% from an investor's perspective is considered reasonable and not a significant factor or explanation for changes. Thus, investors are more interested in how a company generates high profits to provide high returns for them. Investors also believe that companies have specific strategies to cope with inflation in Indonesia, so inflation levels do not affect the company's profits. Certain strategies that companies can apply to maintain their business operations involve eliminating unnecessary operational and marketing costs. Therefore, even with annual inflation, manufacturing companies can still make profits, and investors receive their returns from the company. For these reasons, when making investment decisions, investors are resilient to changes in inflation rates from year to year, as long as the inflation rate is considered reasonable and stable.

5. Conclusion

Based on the results of statistical analysis and the existing theoretical review, the macroeconomic factor that affects stock returns is interest rates, while exchange rates and inflation do not impact stock returns.

6. Recommendation

Based on the conducted research, the following recommendations are proposed for future researchers:

1. Future researchers are encouraged to increase the sample size of companies that meet the research criteria. A larger sample size can provide a more representative and robust result.
2. It is suggested that researchers consider adding explanatory variables related to stock returns, such as Return on Investment (ROI), Return on Equity (ROE), Dividends per Share (DPS), and others.

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