The Effect of Indonesian Rupiah Exchange Rates, Inflation, and Interest Rates on The Stock Performance of Manufacturing Companies in Indonesia

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THE EFFECT OF INDONESIAN RUPIAH EXCHANGE RATES, INFLATION, AND INTEREST RATES ON THE STOCK PERFORMANCE OF MANUFACTURING COMPANIES IN INDONESIA

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ABSTRACT

This study investigates the effect of Indonesian Rupiah exchange rates, inflation, and interest rates on the performance of the stock. The population of this study is all manufacturing companies listed on the Indonesia Stock Exchange (IDX) and reported on the ICMD (Indonesian Capital Market Directory) in the 2016-2018 period. The sampling was conducted using purposive sampling and the data from 129 companies have been selected based on certain criteria. Whereas, the analysis technique used in this study is linear regression. The results showed that the Indonesian Rupiah exchange rates have a significant positive effect on stock performance while inflation does not have a significant effect. On the other hand, interest rates are found to have a significant negative effect on stock performance. The results of this study are useful for investors in making investment decisions in that they need to consider IDR exchange and interest rates in determining investment policies for Indonesian manufacturing companies.

KEY WORDS

Exchange rates, inflation, Interest rates, stock performance.

The purpose of investment is to maximize returns without forgetting the risk factors that must be faced. Return is one of the factors that motivates investors to invest and is also a reward for the risk borne by them in the investment. Risk is the possibility of a difference between the realized return and the expected return. The greater the possibility of the difference, the greater the risk of the investment. In other words, the relationship between risk and expected return is direct and linear (Tendelilin, 2001). The existence of a positive relationship between *return* and risk in investing is known as a *high risk-high return*. It means that the greater the risk, the greater the return. Thus, it is necessary to analyze the factors that influence stock returns. Macroeconomic conditions need to get attention from investors because it will affect stock performance. This study aims to examine the effect of the macroeconomic environment which includes the Indonesian Rupiah exchange rates, inflation, and interest rates on stock performance.

Furthermore several previous research showed vary results. For instance, Okechukwu et al. (2019) revealed that the exchange rate had a significant positive effect on Nigerian stock performance. However, other research exhibited the negative effect of exchange rates on stock performance. The exchange rate has a significant negative effect on stock prices in the United Arab Emirate in the short and long term. However, research conducted in the Kingdom of Saudi Arabia and Jordan exhibited no significant effect (Mgammal, 2012; Al-Abdallah & ALjarayesh, 2017). Bai (2014) found that the inflation rate has a weak relationship with stock performance. Other research result, however, exhibited significant effect. The research results exhibited varied interest rates influence on stock performance. Therefore, research on the effect of macroeconomic conditions on stock performance remain crucial as the results of previous studies have not exhibited consistent results.

This research is crucial due to fluctuating macroeconomic conditions. Therefore, it requires accurate predictions in determining investment policies. The government requires accurate investment behavior in determining government policy. The research examining the effect of exchange rates, inflation rates, and interest rates on stock performance in Indonesia is limited and exhibited inconsistent results. Therefore, it is crucial to examine the effect of

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macroeconomic variables on stock performance. This study provided broader understanding of the macroeconomic aspects of the shares performance in Indonesia.

LITERATURE REVIEW

Return is the result obtained from an investment. Return can be either realized return or expected return. The expected return is a return which is not yet occurred but is expected to occur in the future. On the one hand, risks consist of systematic and unsystematic risks. Both of these risks are often referred to as total risk (Jogiyanto, 2000). In measuring stock performance, investors need to pay attention to returns and risks. If the investment risk increases, the level of profit required by the investor will be even greater. To reduce investment losses or risks, investors can invest in various types of shares by forming a portfolio. Portfolios are unique for investing in risky assets. A realistic investment will invest not only in one type of investment, but will diversify into a variety of investments with the expectation of minimizing risk and maximizing return.

Capital market is inseparable from various environmental influences, one of which is the macroeconomic changes that occur in exchange rates, inflation, and interest rates (Chen *et al.*, 1986; Pilinkus, 2010). The analysis of economic conditions is the basis of securities analysis. If the economic conditions are bad, it is most likely that the returns of outstanding shares will reflect a comparable decline. Conversely, if the economy is good, it will reflect a good stock price which will have a positive impact on stock return.

Exchange rates are macroeconomic variables that also affect stock price volatility. The depreciation of domestic currency will increase export volumes. If the international market demand is elastic enough, it will increase domestic company *cash flow* which then will increase stock prices. This is reflected in the IDX Composite. Conversely, if the issuer buys domestic products and has debt in the form of dollars, the price of the shares will go down. The changes in foreign exchange rates (represented by USD) will also have an impact on the capital market. A decrease in the Indonesian Rupiah exchange rates against the USD will make the company have an external debt in USD. The cash in Indonesian Rupiah will increase to be exchanged with USD when the debt payment to the external party is due. This can be a loss for the company when the exchange rates between Indonesian Rupiah and USD reduces the company's net profit. The decrease in net income will reduce the dividends that should be paid to investors. This loss affects the company because it can reduce the company's image in the eyes of investors. As a result, investors will have many considerations to buy the company shares and investors who already have shares in the company will try to sell their shares again. The action of selling shares by investors on a large scale will cause a decline in the value of the company's shares. The results showed that exchange rates have a significant effect on stock performance (Yousuf, A. and Nilsson, 2013; Abayomi et al., 2017; Bagh et al., 2017; Kwofie & Ansah, 2018). Mbulawa's research (2015) exhibited that exchange rates are interrelated to stock market performance in Zimbabwe. Okechukwu et al. (2019) found the exchange rate had a significant positive effect on stock performance in Nigeria. Al-Abdallah & ALjarayesh, 2017) found that the exchange rate had no significant effect on the Jordan share performance. Mgammal (2012) found that exchange rates have a significant negative effect on stock prices in the United Arab Emirate in the short and long term. However, research conducted in Kingdom of Saudi Arabia exhibited differing result. Innocent et al. (2018) found that the inflation rate had a significant negative effect on Rwanda stock performance. Robiyanto's research results (2018) indicate that the IDR exchange rate against the USD has a significant negative effect on the Jakarta Composite Index Return and the Jakarta Islamic Index. Therefore, hypothesis 1 can be formulated as follows:

Hypothesis 1. Indonesian Rupiah exchange rates affect stock returns.

A high level of inflation indicates that the risk to invest is quite large because high inflation will reduce the *rate of return* from investors. In this condition, the prices of goods or raw materials have a tendency to increase. The increased prices of goods and raw materials will increase production costs so that it will affect the decrease in the number of requests resulting in a decrease in sales. Consequently, this will reduce the company's revenue. This will adversely affect the company's performance which is also reflected by the decline in stock *returns* (Djayani, 1999). Research from Khumalo (2013) pointed out that inflation has a significant negative effect on stock prices in South Africa. Al-Abdallah & ALjarayesh, 2017) found that the inflation rate had a significant effect on Jordan stock performance. Kwofie & Ansah (2018) found that the inflation rate had a significant long-term effect on stock performance, but did not have a significant effect on Ghana stock performance. Innocent et al. (2018) found that the inflation rate had a significant negative effect on Rwanda stock performance. Okechukwu et al. (2019) found the inflation rate had a significant positive effect on Nigerian stock performance. The second hypothesis in this study is:

Hypothesis 2. Inflation rates affect stock returns.

The volatility of interest rates affects stock assessment by affecting the core value of the company such as net profit margin, sales interest, and others. An increase in interest rates negatively affects the value of assets from the increasing *return* that is required. In addition to that, high-interest rates cause the investors to change the structure or investment from the capital market to the securities market which is a *fixed-term income* like government bonds. Conversely, a decrease in interest rates causes an increase in the value of future dividends**.** If the money supply in the community increases, it will ease the business owners and companies to get funds through banks rather than the capital market. This is due to the increased supply of funds that will cause an increase in the allocation of credit from banks to the business industry. With this matter, business players will be easier to seek funds from the banking sector. With the declining interest of businesses and companies in seeking funds in the capital market, the image of the capital market becomes less attractive to investors. The amount of money running in economic circulation has a negative influence on the stock exchange. Though Bai (2014) and Innocent et al. (2018) found that the inflation rate had a weak relationship with stock performance, most of research findings exhibited significant effects. The results from previous studies (Al-Abdallah & ALjarayesh, 2017; Ramsharan, 2019; Alam & Udin, 2009; Amarasinghe, 2015; Okechukwu et al., 2019) revealed that interest rates have a negative influence on stock performance. Thus, it can be formulated:

Hypothesis 3. Interest rates affect stock returns.

METHODS OF RESEARCH

The population in this study is all manufacturing companies listed on the Indonesia Stock Exchange (IDX) and reported on the Indonesian Capital Market Directory (ICMD) in the 2016-2018 period. The sampling in this study was conducted by purposive sampling method. Purposive sampling is based on certain criteria in accordance with the objectives of the study. The samples are manufacturing companies that report financial statements on the Indonesia Stock Exchange in 2016-2018 consecutively. During that period, the company has complete data related to monthly closing prices. Based on the data obtained from the Indonesia Stock Exchange, the number of manufacturing companies that meet the criteria is 129 companies. The stock performance in this study was measured based on portfolio returns. Portfolio returns are used to minimize the level of risk by diversifying a number of shares. Meanwhile, the secondary data used in this study is the Composite Stock Price Index contained in the Indonesian Stock Exchange. A single return is the result obtained from an investment in the form of realized returns and expected returns. Realized return is calculated based on historical data and serves as a measure of stock performance. The data of the exchange rate variable uses the middle rate and is taken from secondary data published by Bank Indonesia. This is the same with the data on inflation that is taken from secondary data published by Bank Indonesia. The real rate of interest is the nominal interest rate minus the inflation rate that occurred during the same period (Boediono, 2016). The changes in interest rates are calculated using the difference in interest rates each month. The secondary data published by Bank Indonesia is also used for the interest rate data. The data are then analyzed using linear regression analysis and SPSS for Windows to determine the effect of independent variables on the dependent variable. The test was done with a t-test to determine the status of the hypothesis with a significance level of 5%. The classic assumption tests used are multicollinearity test, heteroscedasticity test, and autocorrelation test.

RESULTS AND DISCUSSION

Table 1 – Research Variables Description

Description	Return Portofolio	Exchange Rates	Inflation	Interest Rates
Minimum	-0.29	8924.00	0.02	0.07
Maximum	0.20	12151.00	0.12	0.09
Mean	0.01	9742.28	0.07	0.08
Standard Deviation	0.09	914.88	0.03	0.01

Classical Assumption Test Results

The results for the classical assumptions of regression analysis showed that the exchange value of VIF is amounting to 1.538 while inflation by 2.328 and interest rates by 3.664. From these figures, it can be concluded that the regression model is not multicollinearity research. On the other hand, the results of the heteroscedasticity test showed that all variables have no significant relationship with the residual so that the regression model is not affected by heteroscedasticity. In the regression analysis, it is found that the value of *Durbin-Watson* is 1.861 so that there is no problem with autocorrelation.

Table 2 – Regression Test Results

Description		(Constant)	Exchange Rates	Inflation	Interest Rates
Unstandarized Coefficients	B	-0.062	0.815	0.140	-0.630
	Std. Error	0.136	0.111	0.113	0.112
Standardized Coefficients			0.810	0.136	-0.640
T		-0.460	5.754	1.743	-3.821
Sig-t		0.649	0.000	0.091	0.001

Hypothesis Test

Based on the results presented in Table 2, it is displayed that the t-test value for the exchange rate variable is 5.754 with a probability of 0.000. Thus, hypothesis 1 which states that exchange rates have a significant effect on stock performance can be accepted. The results of data processing showed that the t-test value for the inflation variable is 1.743 with a probability of 0.091 (> 0.05). Therefore, it can be said that hypothesis 2 is rejected. The t-test value for the interest rate is -3.821 with a probability of 0.001. By that, hypothesis 3 which assumes that interest rates have a significant effect on stock performance can be accepted.

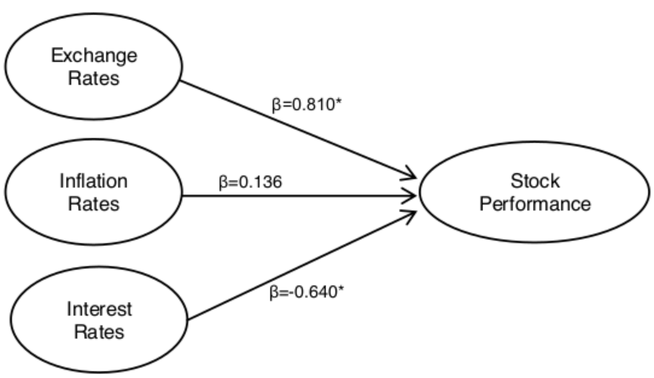

Figure 1 – Regression Model (*significant at 0.05)

DISCUSSION OF RESULTS

Macroeconomic variables that are reflected in Indonesian Rupiah exchange rates have a significant effect on stock performance. This can be explained that, in terms of price competition, the value of Indonesian Rupiah towards USD will have an impact on the marketing development of Indonesian products in foreign countries. If this happens, it will have an indirect effect on the trade balance which in turn will also affect Indonesia's balance of payments. The worsening balance of payments will certainly affect foreign exchange reserves. The decreased foreign exchange reserves will reduce investor confidence in the Indonesian economy which in turn will have a negative impact on stock trading in the capital market. This will lead to *capital outflows*. If there is an excessive fall in the exchange rate, it will affect the *go-public* companies to depend on the production of imported goods. A large amount of import expenditure in a company can increase production costs so that the company's stock price will go down and the profits from the company will become lower. Vice versa, if the value of the Indonesian Rupiah increases, the amount of imported expenditure can reduce production costs and increase company profits.

The existence of a significant positive influence on the exchange rates of Indonesian Indonesian Rupiah to the stock's performance indicates that the strengthening of Indonesian Indonesian Rupiah has an effect on the increase of stock returns. This can be said that the strengthening of Indonesian Rupiah exchange rates has a positive effect on the performance of issuers which will also increase investor confidence to invest in the capital market. When the exchange rates of Indonesian Rupiah on the US Dollar is weak, it affects the equity market because the equity market has no appeal. This happens because investors tend to save money in USD. In addition to that, the weakening of Indonesian Rupiah on USD will affect the performance of manufacturing companies because many companies have foreign loans in the form of Dollars for long-term projects (Suyati 2018). Research result supported Robiyanto (2018) research in Indonesia. It is consistent with studies conducted in other countries, for instance Yousuf and Nilsson (2013) in Sweden, Mbulawa (2015) in Zimbabwe, Bagh et al. (2017) in Pakistan, Okechukwu et al. (2019) in Nigeria, Okechukwu et al. (2019) in Nigeria. Research results are consistent with research conducted in United Arab Emirate. However, research result differs from research conducted in Kingdom of Saudi Arabia (Mgammal, 2012), and Jordan (Al-Abdallah & Al-Jarayesh, 2017).

It is also found that inflation has no significant effect on stock performance. In other words, inflation does not directly affect investment in the capital market within the same period. Inflation reflects the level of price increases for commodities. This will influence the real sector where the increase in commodity prices will disrupt the trading or transaction flow. Therefore, investors in the capital market within that period will not be affected by the changes in inflation. In other words, the market can still accept a certain level of inflation.

However, if inflation exceeds a threshold, the capital market will be disrupted. If inflation exceeds the normal limit, the Bank of Indonesia will increase its rates causing the investors to shift their capital to other sectors. Bai (2014) found the inflation rate has a weak relationship with China stock performance. However, research result differs from Khumalo's (2013) research which exhibited that inflation has a significant negative effect on South African stock prices. The previous studies (Ramsharan, 2019; Alam & Udin, 2009; Amarasinghe, 2015; Al-Abdallah & ALjarayesh, 2017; Okechukwu et al., 2019) exhibited that interest rates have a significant negative effect on stock performance. Therefore, the previous research result were not consistent with the results this research. Kwofie & Ansah's research in Ghana (2018) differs from the result of this research as well. It indicates that the inflation rate has a significant long-term effect on stock performance. The differing research results may be caused by the varied sensitive factors in respective countries. An extensive research is crucial to generalize the effect of the inflation rate on stock performance.

Besides that, the results of this study indicate that interest rates have a significant negative effect on stock performance. It can be understood that in facing an increase in interest rates, shareholders will hold their shares until the interest rates return to the levels that are considered normal. Conversely, if the long-term interest rates are rising, the shareholders will tend to sell their shares because of high selling prices (Suyati, 2018). Based on these results, it can be said that the increase in interest rates can increase the burden of a company (issuer) to meet the obligations or debts to Banks so as to reduce corporate profits. Consequently, this will reduce the stock exchange rates. This also has the potential to encourage investors to divert their funds in the form of savings and deposits so that the investment in the capital market will be decreased. This will create a lower stock price. Conversely, if the interest rates go down, the company's expense will decrease thereby increasing company profits that ultimately can improve the distribution of cash dividends to investors. This condition will increase the stock price. The research results support previous research (Al-Abdallah & ALjarayesh, 2017; Ramsharan, 2019; Alam & Udin, 2009; Amarasinghe, 2015; Okechukwu et al., 2019) that interest rates have a significant negative effect on stock performance. However, the research result differs from Bai (2014) and Innocent et al. (2018). Their research result indicated that the inflation rate has a weak relationship with stock performance.

RESEARCH IMPLICATIONS

The findings of this study have academic implications by expanding previous research that has examined the effect of exchange rates, inflation rates, and interest rates on stock performance. The results of this study support the research from Abayomi et al. (2017) who found that exchange rates have a significant effect on the stock market performance in Nigeria. Mechri et al. (2018) also found that exchange rate volatility has an effect on stock markets. However, the results of this study are not relevant to the research from Seri and Kumar (2015) which believed that the exchange rate and stock market do not have a significant effect on each other. It is assumed that the two variables do not have a mutually independent relationship. Therefore, further research is still needed to examine the effect of the exchange rates on stock performance.

The effect of inflation on stock performance shows a non-significant effect. This is contrary to the results of Khumalo (2013) which found that inflation has a significant negative effect on stock prices in South Africa. Future studies need to consider the effect of inflation on stock performance because inflation does not directly influence stock performance in the same period of time. The increased price of basic goods does not necessarily affect the performance of the stock.

These findings are consistent with the results of previous studies conducted by Ramsharan (2019) and Nature and Udin (2009) that interest rates have a negative effect on the stock market. This finding is also in line with Amarasinghe (2015) which revealed that interest rates have a significant and negative effect on the stock price in Colombo. By that, the results of this study emphasized that interest rates have a negative influence on stock performance.

This finding also has practical implications in the making of stock investment. Macroeconomic conditions become a benchmark to buy or sell shares. The results of this study indicate that Indonesian Rupiah exchange rates and interest rates significantly influence stock performance. Meanwhile, inflation rates are known to not have a significant effect on stock performance. This becomes a guide for investors or potential investors to consider the Indonesian Rupiah exchange rates and interest rates. Inflation rates do not have a significant effect on stock performance so that inflation is not a consideration in investment decisions. The research results provide recommendations to the government to stabilize the IDR exchange rate against USD. A stable and strong exchange rate attracts investors to Indonesia. The government must stabilize interest rates at realistic levels to benefit investors in the Indonesian stock market.

CONCLUSION

The results of this study indicate that macroeconomic variables in Indonesia such as the Indonesian Rupiah exchange rates have a significant positive effect on stock prices.

Meanwhile, interest rates have a significant negative effect on stock performance. These two factors become the concern of investors in making an investment in the stock market. The strengthening of Indonesian Rupiah exchange rates indicates an improved economic condition, making it profitable to invest in shares. When interest rates increase, it increases the burden of the company to meet its obligations or debts to Banks so that it can reduce corporate profits. Eventually, this will lower stock prices. Inflation has an insignificant effect on stock performance. It can be said that inflation does not necessarily affect stock prices.

This study has several limitations. First, this research is only done in Indonesia so that it cannot be generalized to every country. Country characteristics might strengthen the relationship between macroeconomic variables on stock returns. Therefore it may warrant attention in future research. Secondly, the data analyzed are within a period of 3 years (36 months) so that these data cannot represent long-term economic conditions. It is recommended that future studies can examine these factors in other countries so that the findings can be more general. Future studies should also increase the time period thus can reflect the country's long-term economic conditions. Future research should increase the time period of the study to ensure it reflects the long-term economic conditions. Further research is crucial to compare stable and unstable conditions, to determine sensitive factors in stock returns.

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