The Influence Of BI Rate, Inflation, And Exchange Rate On The IDX Composite Stock Index (IHSG)

Ratnaningrum Ratnaningrum[1*], Bella Kharisma Putri [2], Retno Wulandari[3], Kusna Djati Purnama[2]

[1] Department of Accounting, STIE Studi Ekonomi Modern, Kartasura, Indonesia
[2,4] Department of Management, STIE Studi Ekonomi Modern, Kartasura, Indonesia
[3]Senat Akademik Universitas Sebelas Maret, Surakarta, Indonesia
[*]Corresponding Author:
Email: ratnaningrumsolo@gmail.com

Abstract.
This study investigates the impact of variations in the BI rate, inflation rate, and the USD/IDR (US Dollar to Indonesian Rupiah) exchange rate on the IDX Composite Index (IHSG). The Composite Stock Price Index is one of the resources that investors use to choose their investing strategy. Inflation, exchange rates, business interest rates, and the IHSG are among the variables that make up the sample used in this study, which spans 60 months from January 2015 to December 2019. The analysis of the data was done using multiple regression methods. According to the findings, the IHSG is negatively impacted by changes in the BI rate, positively impacted by changes in the USD/IDR exchange rate, and not impacted at all by changes in the inflation rate. Additional analysis should look at additional potential macroeconomic factors.

Keywords: *BI rate, inflation rate, USD/IDR exchange rate, IDX Composite Price Index (IHSG).*

I. INTRODUCTION

Stock market investing may be tremendously lucrative but also very hazardous. So, in order to increase their profits and reduce their risk, prospective investors try to examine and forecast stock market price patterns. Companies sell shares and/or bonds on the capital market to raise money for extra capital for the business [1].The economy of a nation is greatly influenced by the capital market. Economic development in many nations has been positively impacted by capital market funding support [2]. The development of a nation's industry and trade, which eventually has an impact on the economy, is significantly influenced by the stock market [3].Companies can access long-term cash for investments through the stock market. The market engages in an intermediation process by collecting money from different investors who want to invest their extra money through alternative investment channels. Before investing their money, investors closely monitor the performance of the stock market using the composite market index. Market indices give investors a way to predict future market movements as well as benchmarks for evaluating the performance of individual portfolios and past stock market performance. Investors will only make investments in a country if its state is favourable [4].The movement of the Composite Stock Price Index (JCI), which is listed on the Indonesia Stock Exchange (IDX), can be used to determine whether the Indonesian capital market has increased or decreased. The movement of the composite market index changes periodically. The Composite Stock Price Index is a collection of data that has been recorded on how the combined stock price has changed up to a particular point, reflecting the value as a gauge of the performance of the joint stock on the stock market [5]. The Composite Stock Price Index is thus one of the resources that investors use to decide on their investment plan.The Composite Stock Price Index is thus one of the resources that investors use to decide on their investment plan.

Investors can determine whether the Indonesian capital market is robust or weak by looking at the IDX Composite Stock Price Index, which depicts the trend of the country's stock market. In addition to the Indonesian market, which is a developing market and highly susceptible to general macroeconomic conditions [6], emerging market conditions are more susceptible to volatility in the stock market and currency market due to structural flaws [7].Investors take into account how various macroeconomic factors, such as interest rates, inflation rates, currency rates, and money supply, affect the performance of their stocks, The Composite Stock Price Index (JCI) can be impacted by macroeconomic factors, according to a number of earlier studies, including those from [8,9,10]. Macroeconomic factors are crucial for stock market

performance [11].These factors can be utilised by investors as benchmarks to forecast stock market performance and as a viable alternative to learn more about stock market behaviour [12]. Macroeconomics is the study of economic developments that have a broad impact on society, businesses, governments, and the international community. Investors desire macroeconomic conditions that are predictable, measurable, and assured.Interest rates in a market economy can affect a company's worth both directly and indirectly[13]. In the case of conventional markets, the relationship is significant because it should be the opposite of the relationship between stock prices and interest rates since interest rates are used to discount future cash flows from financial assets.

In other words, an increase in the interest rate creates the required rate of return on the stock price, which lowers stock prices in turn [14].The stock market is negatively impacted by interest rates [15]. Other research, however, has indicated that the stock market is not significantly impacted by interest rates [16].In an economy with daily price increases, called inflation, people's purchasing power will gradually decline [17]. Price rises have been trending higher in the economy, and it is crucial to monitor how they have changed over time [18]. The consequences of inflation on the economy can be both good and detrimental [19]. One of the activities affected by inflation is capital market investment activity. According to [20], inflation discourages investors or causes them to invest elsewhere, thereby lowering the JCI. When inflation rises, people's purchasing power will decrease along with strong sales, which leads to an increase in unemployment which will reduce income levels and personal welfare. Therefore, companies tend to face many challenges when trying to finance themselves through the issuance of shares, which can affect the share price [17]. The currency exchange rate will have an impact on stock prices, because a country's exchange rate will increase investor returns or income along with its strengthening [5].This can lead to an increase in foreign investment in the destination country. As a global standard, the dollar, exchange rates will have an impact on commodity prices [21]. Especially for hard currencies such as the US Dollar (USD) and Japanese Yen (JPY), the function of foreign exchange rates is very important for developing countries such as Indonesia [2]. Changes in exchange rates have an impact on the stock value of both domestic and international businesses, which has an impact on the growth of the stock market [22].

II. METHODS

The population in this study is all monthly time series data including inflation, exchange rate, BI Rate, and the Composite Stock Price Index from the Indonesia Stock Exchange. The sample in this study is a monthly time series for 60 months, from January 2015 to December 2019, which includes:

a. Composite Stock Price Index (CSPI) data is monthly data issued by the Indonesia Stock Exchange (IDX) through yahoo.finance. The data used is monthly data for 2015-2019.
b. Bi Rate data is obtained from www.bi.go.id. The data used is monthly data for 2015-2019.
c. Inflation data is obtained from www.bi.go.id. The data used is monthly data for 2015-2019.
d. Exchange data obtained from www.bi.go.id. The data used is monthly data for 2015-2019
e. The Composite Stock Price Index is an indicator of the performance of the composite stock in the capital market which shows the average development of all stocks listed on the stock market. CSPI is calculated by the following formula:

$$\text{CSPI (IHSG)} = \frac{\Sigma\, Market\ Value}{\Sigma\, Base\ Value}\ x\ 100$$

Inflation is a state of the country's economy in which there is a tendency to increase prices and services in the long term, due to an imbalance in the flow of money and goods. The inflation rate is calculated by the following formula:

$$Inflation\ Rate = \frac{CPI2 - CPI1}{CPI1}\ x\ 100\%$$

CPI1 : Consumer Price Index in the second Period
CPI2 : Consumer Price Index in the previous Period

The rupiah exchange rate (IDR/USD exchange rate) is measured using the current exchange rate minus yesterday's exchange rate and divided by yesterday's exchange rate. The exchange rate used is the average rate per month. The Exchange Rate Variable is measured using the Average Middle Exchange Rate of the US Dollar against the Rupiah issued by Bank Indonesia every month.

Exchange rate $= \frac{Selling\ rate + Buying\ rate}{2}$

The BI Rate is the interest standard set by Bank Indonesia for commercial banks which is one of the most effective monetary policy instruments to control inflation. BI rate is calculated by the following formula:

BI Rate = BI Rate at period t /12

This research was conducted on the Indonesia Stock Exchange (IDX) with the dependent variable in this study, namely the Composite Stock Price Index (IHSG) which serves as a measurement of the overall performance of the joint stock on the Indonesia Stock Exchange. The observation period is 5 years, 2015-2019. The data used are the closing price of the JCI, the IDR/USD exchange rate, the inflation rate and the BI interest rate with a sample of 240 samples with details of 60 samples each year. The data was processed using the Eviews 9 program. The following are the results of descriptive statistical tests.

III. RESULT AND DISCUSSION

Table 1. Descriptive Statistics Test Results

Variable	Mean	Min	Max	Standard Deviation
IHSG	5628	4224	6605	641396
BI Rate	5.763	4.250	7.750	1.165
Inflasi	3.990	2.480	7.260	1.372
Kurs	13.717	12.625	15.227	541.624

Based on Table 1, the highest composite stock price index (IHSG) is 6,605, while the lowest is 4224 and the average is 5628 with a standard deviation of 641,396. The standard deviation value is smaller than the average, indicating that the IHSG data is less volatile. The highest BI rate was 7750, while the lowest was 5.763 and the average was 4.250 with a standard deviation of 1.165. The standard deviation value is smaller than the average, indicating that the BI rate data tends to be stable. Furthermore, the highest inflation was 7260, while the lowest inflation was 2480 and the average value was 3990 with a standard deviation of 1372. The standard deviation value was smaller than the average, indicating that inflation during the study period was under control. Next, the highest IDR USD exchange rate is 15227, while the lowest is 12625 and the mean value is 13717 with a standard deviation of 541,624. The standard deviation value is smaller than the average, indicating that the IDR USD exchange rate during the study period was not volatile.

Table 2. Heteroscedasticity Test Results

Variable	Mean	Min	Max	Standard Deviation
IHSG	5628	4224	6605	641396
BI Rate	5.763	4.250	7.750	1.165
Inflasi	3.990	2.480	7.260	1.372
Kurs	13.717	12.625	15.227	541.624

The results of the heteroscedasticity test showed the value of Obs*R-squared 5.276894 with Prob. Chi-Square 01526. Because the value of Prob. The Chi-Square> 005 means that the data does not experience symptoms of heteroscedasticity

Table 3. Multicolinearity Test Results

Variable	CoefficienVariance	Centered VIF
BI_ rate	5064.016	1.941113
Infation	4206.170	2.237162
Exchange rate	0.014953	1.239209

The results of the Multicollinearity test in table 3 show that there is no independent variable indicating that there is no independent variable that has a Variance Inflation Factor (VIF) value of more than 10 so it can be concluded that there is no multicollinearity.

Table 4. Autocorrelation Test Results

Annotation	Value	Decision
DW stat	1.615613	There is no autocorrelation problem

The autocorrelation test in table 4 shows the Durbin-Watson value is between 1.54 and 2.46, so it can be concluded that there is no autocorrelation problem.

Hypothesis Test Results

Hypothesis testing using multiple linear regression analysis is a linear regression model involving more than one independent variable or predictor. The multiple linear regression equation is as follows:

$IHSG = \alpha + \beta_1 I + \beta_2 ER + \beta_3 BR + e$

Where:

IHSG = IDX Composite stock price index
α = Constanta
β_1- β_3 = Coefficient
I = Inflation
BR = Bi Rate
ER = Exchange Rate
e = error

Table 5. F Test Results

F-statistic	Prob(F-statistic)	Decision
27.03947	0.0000	Model Fit

The calculated F value in table 5 explains the effect of Bank Indonesia interest rates, the Indonesian rupiah exchange rate against the USD, inflation, on the composite stock price index (CSPI) from 2015 to 2019 has a value of 27.03947, with a significance value of 0.000. This means that the significance model is smaller than 0.05. Thus, the regression model can be used to predict the composite stock price index (CSPI).

Table 6. Determination Test Result (R2)

Adj R-squared	Decision
0.569715	Magnitude impact of independent variable is 56,97%

The results of adj R2 shown in table 6 show the effect of Bank Indonesia interest rates, inflation, the Indonesian rupiah exchange rate on the IDX from 2015 to 2019 is 56.97%, while the remaining 43.03% is influenced by other variables.Table 7 shows the results of multiple linear regression that examines the effect of the BI rate, inflation, and exchange rate on the IHSG on the Indonesia Stock Exchange in the 2015 – 2019 period.

Table 7. Multiple Linear Regression Test Results

Variable	Coefficient	t	Sig.
Constanta	3053.608	2.106706	0.0396
BI Rate	-291.1287	-4.412273	0.0000
Inflation	-80.75145	-1.467494	0.1478
Exchange rate	0.332493	3.214947	0.0022

Hypothesis 1 states that the Bank Indonesia interest rate (BI Rate) has a negative effect. to the IHSG This study shows that there is a negative effect between the interest rate of Bank Indonesia (SBI) on the joint stock price of -3.942 with a p value of 0.000. Based on the explanation above, H1 is supported. These results are supported by previous research conducted by [9, 23, 24]. High interest rates will weaken the Composite Stock Price Index, because people prefer to invest in banks rather than investing in the capital market, so investors prefer deposits over the capital market. In contrast, investors withdraw deposits from banks and invest in the capital market when interest rates fall.Hypothesis 2 states that inflation has a positive effect on the composite stock price index. The results showed that there was no effect between inflation and the composite stock price index of -1,245 with a p value of 0.218. Based on the explanation above, H2 is rejected. These results are supported by previous research conducted by [23, 25]; This is probably due to controlled (low) inflation in 2015-2019

Hypothesis 3 states that the rupiah exchange rate against the USD (IDR/USD exchange rate) has a positive effect on the composite stock price index. The results showed that there was a positive influence between the rupiah exchange rate against the USD (KURS) and the composite stock price index of 2,385

with a p value of 0.020. Based on the explanation above, H3 is supported. This is in accordance with the research of [26]. These results indicate that the condition of the strengthening of the rupiah against the dollar is a positive signal when the economy is experiencing inflation, on the other hand, if the condition of the rupiah exchange rate is estimated to decline, it is likely that the stock price index will decline. This is because the depreciation of the Rupiah exchange rate against foreign currencies is a negative signal for investors so that it will affect the stock price [27]. On the other hand, when the value of the rupiah increases, there is an effect between the exchange rate and the composite stock price index because export-oriented companies are encouraged to increase their share prices as well [28].

IV. CONCLUSION

Based on the results of, it can be concluded that the BI rate, and the rupiah exchange rate affect the JCI movement on the Indonesian stock exchange. Meanwhile, inflation did not affect the JCI movement on the Indonesia Stock Exchange.Companies should pay more attention to information such as exchange rates, BI rate to take anticipatory steps because it might affect the composite stock price index. The government can implement monetary policy in order to achieve price stability, so that the policy can stabilize the economy by increasing BI interest rates or lowering BI interest rates so that inflation is expected to be controlled.Two variables that affect stock prices are the Bi rate and the rupiah exchange rate can be considered by investors and potential investors. So that investors are wiser in placing their funds in certain securities, and analyze various factors that can affect stock prices. This can also be minimized by considering various external macroeconomic variables that may affect the JCI. This study does not include external (foreign) factors as independent variables, for example the stock price index of countries such as America, Singapore, Japan and China and utilizes various macroeconomic variables to obtain a more complex macroeconomic effect on the JCI, in addition to interest rates, inflation, and exchange rates.

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