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The Impact of Bitcoin Fluctuations, Exchange Rates and Interest Rates on JCI

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Abstract *– The purpose of this study is to analyze the influence of Bitcoin fluctuations, exchange rates, and interest rates on JCI both partially and simultaneously. The method used in the study is quantitative research with a correlational approach. Data is taken using the documentation method based on data that has been published by the company. The research was conducted in the 2019–2023 time range. The data analysis technique uses partial t-tests and simultaneous tests. The results of the analysis showed that there was a significant influence between the fluctuations of bitcoin on the JCI, there was a significant influence on the exchange rate on the JCI, there was an influence of interest rates on the JCI, and there was a joint influence of bitcoin, exchange rates and interest rates on the JCI. The novelty of this research lies in the location and time of the research, namely in companies engaged in the field, and will be carried out in 2024.*

Keywords *– Bitcoin, Exchange Rate, Interest Rate, JCI.*

INTRODUCTION

The Jakarta Composite Stock Price Index (JCI) is one of the main indicators that reflects the condition of the capital market in Indonesia. As a barometer of economic health, JCI plays a vital role in assessing the performance of companies listed on the Indonesia Stock Exchange. However, in recent times, the JCI has shown a significant downward trend, reflecting the pressures and challenges faced by the domestic stock market (Putra & Robiyanto, 2021).

The low value of the JCI not only affects investors and companies but also has broad implications for the national economy. The decline in JCI is often triggered by various factors, both internal such as company performance and government policies, as well as external such as global economic conditions and changes in international market sentiment. The decline in the value of the JCI also indicates a decline in investor confidence, which in turn can hurt investment flows and economic growth (Saputra & Purwanto, 2023; Basrowi et al., 2020).

In recent months, the decline in JCI has been exacerbated by political and economic instability at the national level. Economic policy uncertainty, rupiah exchange rate fluctuations, and rising inflation have added to the burden on the stock market. In addition, uncertain global conditions, such as trade wars and geopolitical tensions, also affected investor sentiment and pressured the JCI to a lower level (Putra & Robiyanto, 2021).

The impact of the low JCI value is also felt by the wider community. The decline in stock prices affects people's purchasing power, especially those involved in stock and mutual fund investments. This decline in the value of assets can reduce domestic consumption and investment, which in turn slows down the pace of economic growth. On the other hand, companies that are members of JCI face challenges in obtaining capital through the stock market, which can hinder business expansion and innovation (Melyani & Esra, 2021).

In this context, it is important to analyze the main causes of the low value of the JCI and its impact on the Indonesian economy. A deep understanding of the factors affecting JCI can help in formulating strategies to mitigate risks and restore investor confidence, as well as support stability and sustainable economic growth (Nour Halisa & Annisa, 2020).

The Jakarta Composite Stock Price Index (JCI) is one of the main indicators that reflects the performance

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of the stock market in Indonesia. The JCI value is not only a barometer for domestic market participants but also for international investors who are interested in the Indonesian economy. However, recently the JCI has shown a significant downward trend. The low value of the JCI raises concerns among investors and the government because it reflects weakening market sentiment and the potential negative impact on the economy as a whole (Ardian et al., 2024).

Several external and internal factors affect the movement of the JCI. Among external factors, Bitcoin price fluctuations, currency exchange rates, and changes in global interest rates occupy an important position. Bitcoin, as one of the most popular digital assets, often exhibits high volatility that can affect investor confidence in risky assets, including stocks. In addition, the exchange rate of the Rupiah against foreign currencies, especially the United States Dollar, also has a direct impact on the JCI. These exchange rate fluctuations are often triggered by various global factors, such as the monetary policies of developed countries and uncertain geopolitical conditions (Paryudi, 2021).

Interest rates, both domestic interest rates set by Bank Indonesia and global interest rates as determined by the United States Federal Reserve, are also important determinants in the dynamics of the JCI. Rising interest rates generally lead to increased borrowing costs and a decrease in consumption and investment, which can ultimately put pressure on the stock market. Conversely, a reduction in interest rates can provide a stimulus for the economy but also risks triggering inflation (UD Prathama, 2023).

Through this research, we will analyze how Bitcoin fluctuations, exchange rates, and interest rates affect the value of the JCI. Understanding this relationship is expected to provide insights for investors and policymakers in formulating better strategies to deal with market uncertainty and maintain economic stability collaborative efforts between governments, capital market authorities, and industry players are needed to create a conducive investment environment, as well as strengthen the foundation of the national economy in facing global challengesCurrency markets are becoming increasingly complex and dynamic in the era globalization and information technology (Kamal et al., 2021).

The aforementioned changes have resulted in the emergence of many new financial products and increased availability and accessibility of information for individuals and institutions around the world. One of the most popular cryptocurrencies in recent years is called Bitcoin. Bitcoin, which was first described in 2009 by someone under the pseudonym Satoshi Nakamoto, is a type of digital currency that runs on a decentralized peer-to-peer network (Melyani & Esra, 2021).

The difficulty of carrying large amounts of cash and the security factor make digital money even more fun. Getting more attention from the world community, digital money began to be used as an investment called Cryptocurrency" (Nitha and Westra, 2020)[1]. The difference between Bitcoin lies in the fact that it is not regulated or backed by an official entity such as a central bank or government agency. For example, Bitcoin transactions are recorded or recorded in a large public book known as the blockchain. Characteristics such as decentralization, anonymity, and non-dependence on a central authority have made Bitcoin attractive to many as an alternative to traditional currencies (Paryudi, 2021).

The formulation of problems in a study is to make it easier to analyze, and evaluate problems and to be more directed and clear so that effective and efficient problem-solving steps are obtained. The formulation of the problems raised by the author is:

1. Do Bitcoin fluctuations have a significant impact on JCI movements?
2. How does the exchange rate affect the performance of the Indonesian stock market (JCI)?
3. Do interest rates affect changes in JCI?
4. How do Bitcoin fluctuations, exchange rates, and interest rates interact with each other in influencing the JCI?

OBJECTIVES OF THE STUDY

Bitcoin Concept

First of all, Bitcoin is part of the category of cryptocurrencies or cryptocurrencies. It refers to a form of digital money that uses cryptographic techniques to secure transactions and regulate the creation of new units (Wahab & Fathoni, 2023). Cryptography, as a subdiscipline within computer science, has a focus on information security. In the realm of cryptocurrencies, cryptography functions to verify and maintain the security of transactions, as well as control the creation of new units (Luxmana & Octafiyani, 2022).

Bitcoin runs inside a decentralized network known as a blockchain. Blockchain is a digital record that records all Bitcoin transactions that have occurred (Setiawan & Asrowi, 2020). Its function is as proof of ownership as well as allowing the tracing of Bitcoin

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www.sajst.org

transactions back to its source. The Bitcoin blockchain network consists of some computer nodes spread across the globe.(Wulandari & Parameswara, 2020).

The price of Bitcoin fluctuates due to changes in interest rates, investor and user sentiment, government regulations, and the hustle and bustle of the media. All of these factors work together to determine price volatility.

Exchange Rate Concept

Aristotle defined the exchange rate as the ability of an item to be traded for other goods in the market. The exchange rate is defined as the threshold at which a currency will be exchanged for another currency. David K. Elteman, et al define an exchange rate as the price of a currency based on another currency. The beginning of exchange rate determination began with the establishment of the Bretton Wood system in 1944. Where at that time there was a division into two categories of currencies, namely hard currency and soft currency. In the hard currency category, the currency of the country that falls into the category is linked to the value of the currency and converted to the weight of gold (Hermawan & Purwohandoko, 2020)

Exchange rate dimensions and indicators are important instruments in analyzing and understanding the movement of a country's currency about the currencies of other countries. The exchange rate dimension includes both nominal and real aspects, while the indicator includes the real effective exchange rate (REER), nominal effective exchange rate (NEER), and various other factors that provide an overview of the stability and competitiveness of a country's currency in international trade. The nominal dimension of the exchange rate reflects the price of one unit of a country's currency in the currency of another country. For example, if one US dollar is worth 0.85 euros, it indicates the nominal exchange rate between the US dollar and the euro (Paryudi, 2021).

The Influence of Bitcoin Fluctuations on JCI

Bitcoin fluctuations can have an impact on the Composite Stock Price Index (JCI) through several complex mechanisms. First, Bitcoin price changes can affect global market sentiment towards digital assets in general. If the price of Bitcoin rises, investors may be inclined to turn to crypto assets as an investment alternative, resulting in a decrease in demand for stocks in traditional markets as reflected in the JCI. Conversely, if the price of Bitcoin falls, investors may be more cautious and tend to reinvest in the conventional stock market, which could drive the JCI up. In addition, Bitcoin price fluctuations can also affect the performance of companies involved in the blockchain or crypto ecosystem. These companies may be included in the JCI and changes in the price of Bitcoin can have a direct impact on the value of their shares, which then affects the overall movement of the JCI. Thus, the linkage between Bitcoin fluctuations and JCI is a reflection of the complexity of the interconnection between the digital asset market and the traditional stock market which is growing over time.

The Influence of Exchange Rate on JCI

The relationship between currency exchange rates and the Jakarta Composite Stock Price Index (JCI) is often complex and mutually influences financial market dynamics. In general, a decrease in the exchange rate of a country's currency against foreign currencies can have a positive or negative impact on the JCI. For example, the appreciation of the domestic currency tends to reduce the export competitiveness of domestic companies because it makes domestic products more expensive for foreign markets, which can reduce corporate income and JCI performance. On the other hand, the depreciation of the domestic currency could provide a boost for the export sector because it makes domestic products more affordable for foreign markets, which in turn can increase corporate revenues and encourage JCI increases. However, this relationship can be influenced by other factors such as global economic conditions, market sentiment, and monetary policy which can complicate the picture of the relationship. Thus, a comprehensive understanding of the fundamental and policy factors that affect currency exchange rates and JCI is essential for market participants to make informed investment decisions.

The Influence of Interest Rates on JCI

The JCI is an important aspect of financial market analysis. In general, when interest rates rise, the JCI tends to fall, and vice versa. This is because changes in interest rates can affect investors' perception of investing in the stock market. When interest rates rise, the cost of borrowing for investments increases, making investing in the stock market less attractive compared to other financial instruments that offer higher returns without higher risk. As a result, investors tend to withdraw their investments from the stock market and choose to invest in other financial instruments that are safer or provide higher returns. In this context, the JCI could experience

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a decline. Conversely, when interest rates fall, the cost of borrowing for investments decreases, thus making investing in the stock market more attractive to investors. This can encourage the JCI to rise because investors tend to put more capital in the stock market to obtain higher returns. Thus, interest rates can be one of the factors that affect the movement of the JCI in the stock market.

The Influence of Bitcoin Fluctuations, Exchange Rates, and Interest Rates on JCI

The influence of Bitcoin fluctuations, exchange rates, and interest rates on the Composite Stock Price Index (JCI) simultaneously reflects the complexity of the interaction between economic and financial factors that affect each other. Bitcoin's fluctuations, as a crypto asset that is gaining more and more attention, can affect the stock market through investor sentiment, particularly when it comes to speculation and portfolio diversification. The exchange rate, on the other hand, is an important indicator of a country's economic condition, which in turn can affect the performance of the JCI through the effects of trade exposure and capital flows. Meanwhile, interest rates as a monetary policy instrument also have a significant impact on stock prices because they affect the cost of capital and the value of discounts. Simultaneous analysis of these three factors provides a deeper understanding of the stock market dynamics, allowing investors and policymakers to make more informed decisions.

The framework of thinking in this study is that Bitcoin Fluctuations as a variable (X1), Exchange Rate as a variable (X2), and interest rates as a variable (X3) Against the JCI variable (Y).

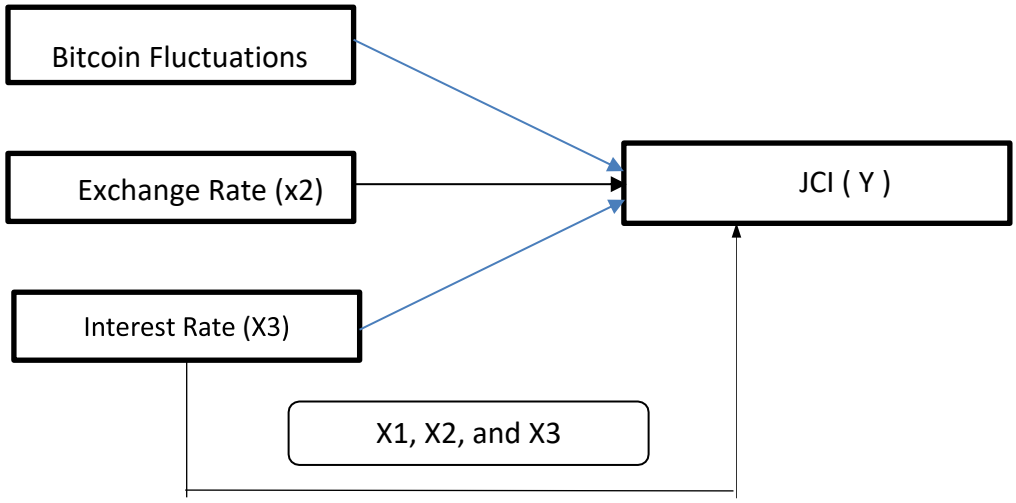

Fig. 1. Research thinking framework

The hypotheses developed in this study are:
Alternative Hypothesis (H1): There is a significant negative influence of Bitcoin fluctuations on the JCI.
Alternative Hypothesis (H2): There is a significant negative influence of the exchange rate on the JCI.
Alternative Hypothesis (H3): There is a significant negative influence between interest rates on the JCI.
Alternative Hypothesis (H4): There is a significant negative influence between bitcoin price fluctuations, exchange rates, and interest rates on the JCI

MATERIALS AND METHODS

Research approach

This study uses a type of quantitative research with a correlational descriptive approach.

Place and Time of Research

The JCI research venue is in Indonesia, as the standard index of the Indonesia Stock Exchange (IDX). (IDX) which can be accessed online with the website The time for this research and secondary data collection will be carried out from April – July 2024.

Population

Population is a generalization area consisting of objects or subjects that have certain qualities and characteristics that are determined by the researcher to be

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studied and then draw conclusions. Includes historical data regarding Bitcoin fluctuations, exchange rates, interest rates, and the value of the JCI (Composite Stock Price Index) in the relevant period. In the context of this study, population refers to the entire data set available for these variables.

Sample

The sample is part of the number and characteristics that the population has. For samples taken from the population, they must be representative. Secondary data in this study is in the form of monthly data in the period 2019 – 2023 which is published.

Data Collection Techniques

This study uses secondary data collection. In carrying out this research, the author obtains data and information from financial statements that have been published by www.idx.co.id As a source to get information about JCI, id.investing.com/crypto/bitcoin/btc-usd-historicaldata As a source to get information about Bitcoin, https://satudata.kemendag.go.id/_ As a source to get information about the rupiah exchange rate to the dollar, https://www.bi.go.id/id/statistik/indikator/bi-rate.aspx As a source to get information about Interest Rates.

Data Analysis Techniques

Test t (partial)

The t-test is used to partially test each variable. The results of the t-test can be seen in the SPSS output of the coefficient table. In the table, what is seen is the value of t or sig. The condition of the t-test is that there is an influence of variable X on Y. If –ttable ≤ calculate ≤ ttable or the value of sig ≤ 0.0521 (Ende, 2018).

Test F (Simultaneous)

This test was carried out to prove whether the influence of independent variables simultaneously (comprehensively) has a significant influence or not with the dependent variables.

RESULTS AND DISCUSSION

Data Description

The results of descriptive statistical research for Bitcoin variables, Exchange Rates, Interest Rates, and JCI are displayed in the following table:

Table 1. Descriptive Statistics of Bitcoin Variables, Exchange Rates, Interest Rates

Statistics

	Bitcoin	Exchange rate	JCI	Tribe_level_b young
Valid	60	60	60	60
N	0	0	0	0
Missing	366074684.8000	1472047.4500	6373.5667	405.1333
Mean	30048970.81725	7331.99108	89.99660	9.97798
Std. Error of Mean	348066496.0000	48582000.00a	1455190.0000	6528.0000	400.0000
Median Mode	232758327.091 77			
Std. Deviation	5417643883055	1373031.00a	5985.00	425.00
Variance Skewness	9296.000	56793.35870	697.11066	77.28913
Std. Error of Skewness Kurtosis	.459			
Std. Error of Kurtosis Range	.309 -.831 .608	3225485591.87	485963.267	5973.609
Minimum Maximum Sum	822928016.00	9 .891	-1.036	.149

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	48582000.00	.309	.309	.309
	871510016.00	.367	.452	-.939
	219644810 88.0 0	.608	.608	.608
		27185	2703.00	290.00
		3.00	4569.00	260.00
		13730	7272.00	550.00
		31.00	382414.00	24308.00
		16448		
		84.00		
		88322		
		847.00		

a. Multiple modes exist. The smallest value is shown

In the results of the descriptive analysis in Table 1, the data showed significant variations in the observed values. For Bitcoin, the data shows a very wide range of transaction values, ranging from 48,582,000 to 871,510,016, with an average of 366,074,684.80 and a standard deviation of 232,758,327,092. This suggests that Bitcoin's values can range from relatively low amounts to very high amounts, with a large number of variations in between. In terms of Exchange Rates, the range of change is quite limited, reaching only 271,853, with an average of around 1,472,047.45 and a standard deviation of 56,793,359. Although this variation is more limited than Bitcoin's, it still shows significant fluctuations in these values. Meanwhile, the Interest Rate shows a relatively high level of stability, with a range of only 571 and a standard deviation of around 217,164, with an average of around 278.92. This indicates that interest rates tend to be in a more stable range of values compared to Bitcoin or the Exchange Rate.

Testing Requirements Analysis

Normality tests have been carried out on all variables and all are normal. Likewise, in the multicollinearity test, all variables showed that there were no multicholinergic symptoms. The results of the heteroscedasticity test also showed that there was no heteroscedasticity problem so a good and ideal regression model could be met. Regarding the autocorrelation test, there is also no autocorrelation problem. Thus, multiple linear regression analysis for the fourth research hypothesis test/ simultaneous test can be performed or continued.

Hypothesis Testing

a. Test t (partial)

t-test (partial) The t-test is used to determine independent variables, namely Bitcoin fluctuations, exchange rates, and interest rates, which partially have a significant influence on the dependent variable, namely JCI. To find out the t_{count} of each variable, see the table below:

Table 2. Bitcoin t Test Results (Partial)

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Mr.
	B	Std. Error	Beta		
(Constant)	6045.692	162.401		37.227	.000
1 Bitcoin	8.956E-007	.000	.299	2.387	.020

a.Dependent Variable: IHSG

Source: SPSS Version 19.0 data processed in 2024

The results of the regression analysis show that there is a significant relationship between the price of Bitcoin and the Jakarta Composite Stock Price Index

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www.sajst.org

(JCI). The non-standardized coefficient for Bitcoin is around 8.956E-007, while the standardized coefficient (Beta) is around 0.299, indicating that every increase of one unit in the price of Bitcoin corresponds to an increase of about 0.299 standard deviations in the JCI. A significant p-value of 0.020 indicates that this relationship is statistically significant. Therefore, it can be concluded that changes in the price of Bitcoin can affect the movement of the JCI.

Table 3. Results of the t-Test (Partial) Exchange Rate

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Mr.
	B	Std. Error	Beta		
(Constant)	3010.358	190.931		15.767	.000
1 Tukr Value	8.301	.463	.920	17.927	.000

a. Dependent Variable: IHSG

Source: SPSS Version 19.0 data processed in 2024

From the results of the regression analysis, it can be seen that there is a significant relationship between the independent variable "Exchange Rate" and the dependent variable "JCI" (Composite Stock Price Index). The non-signed coefficient for the "Exchange Rate" is around 8.301, with a value of the signed coefficient (Beta) of about 0.920, indicating that every increase of one unit in the "Exchange Rate" corresponds to an increase of about 0.920 standard deviations in the "JCI". A very small p-value at 0.000 indicates that this relationship is statistically significant. Thus, it can be concluded that the "Exchange Rate" has a significant influence on the movement of the JCI.

Table 4. Results of the t-Test (Partial) Interest Rate

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Mr.
	B	Std. Error	Beta		
(Constant)	6100.756	1401.465		3.126	.000
1 Tribe_level _bu from	.978	.401	.305	.436	.018

a. Dependent Variable: IHSG

Source: SPSS Version 19.0 data processed in 2024

In this regression model, the dependent variable is the JCI (Composite Stock Price Index). The results of the analysis show that interest rates have a significant influence on the JCI, with a regression coefficient (B) of 0.978 and a t-value of 2.436, with a significance level (Sig.) of 0.018. This indicates that an increase of one unit in the interest rate will increase to 0.978 units in the JCI, after controlling for other variables in the model.

SOUTHEAST ASIAN JOURNAL OF SCIENCE AND TECHNOLOGY

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www.sajst.org

Test F (Simultaneous)

The F (Simultaneous) test is used to determine whether all the independent variables included in the model have a joint influence on the bound variable or not. The following is the table of F test results:

Table 5. Test Result F (Simultaneous)

ANOVA

Model	Sum of Squares	df	Mean Square	F	Mr.
Regression	24587092.861	3	8195 697.620	1 12.359	. 000b
Residual	4084739.873	56	7294 1.783		
Total	28671832.733	59			

b. Dependent Variable: IHSG

c. Predictors: (Constant), Interest_rate, Exchange_rate, bitcoin

Source: SPSS Version 19.0 data processed in 2024

The results of ANOVA analysis show that the regression model using Tingkat_suku_bunga, Nilai_tukar, and Bitcoin variables as predictors significantly affects the JCI ($F(3, 56) = 112,359$, $p < .001$). This means that these three variables together contribute significantly to the variation in the JCI.

Discussion

In this subsection, the results of research based on the results of hypothesis tests will be discussed about the results of previous research and with theories.

The Influence of Bitcoin on JCI

The results of the first hypothesis test that said that there was a significant influence between bitcoin and Composite Stock Price Index (JCI). The non-standardized coefficient for Bitcoin is around 8.956E-007, while the standardized coefficient (Beta) is around 0.299, indicating that every increase in the price of Bitcoin has an effect on an increase of around 0.299 standard deviations in the JCI. A significant p-value of 0.020 indicates that this relationship is statistically significant. Therefore, it can be concluded that changes in the price of Bitcoin can affect the movement of the JCI.

The hypothesis proposed in this study is that there is a significant influence between the price of Bitcoin and the movement of the Composite Stock Price Index (JCI).

The non-standardized regression coefficient for Bitcoin is around 8.956E-007, while the standardized coefficient (Beta) is around 0.299. The standardized coefficient measures how strong the relationship between independent and dependent variables is in standard units of deviation. The non-standardized regression coefficient shows that every increase in the price of Bitcoin affects a decrease of around 0.299 standard deviations in the JCI. In other words, changes in the price of Bitcoin can result in greater changes in the JCI.

A significant p-value of 0.020 indicates that the relationship between the price of Bitcoin and JCI is statistically significant. A low p-value indicates that the likelihood of the observed relationship occurring by chance is very small (Saputra & Purwanto, 2023). Based on the results of the hypothesis test, it can be concluded that there is a significant relationship between the price of Bitcoin and the movement of the JCI. This means that changes in the price of Bitcoin can affect the movement of the JCI.

These findings imply that changes in the crypto market, especially the price of Bitcoin, can have a significant impact on the stock market, as reflected in the JCI movement (Setiawan & Asrowi, 2020). This can be an important consideration for investors and policymakers in planning investment strategies and economic policies (Putra & Robiyanto, 2021).

The results of this study are by the research (Fahrani & Bachtiar, 2022) which concludes that there is

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www.sajst.org

a significant influence between Bitcoin price to JCI. Other research (Warsito & Robiyanto, 2020) concluded that there is a significant influence between Bitcoin price and JCI, where every increase in Bitcoin price will cause a decline in the JCI. The rise and fall of JCI is influenced by the rate of Bitcoin price. Investors in this case want the Bitcoin price low so that JCI is high (Fres, 2022). This happens every time there is an increase in Bitcoin price causing a decline in JCI (Hertanto et al., 2024). This also applies to the opposite condition where every decrease occurs in Bitcoin price, then there was an increase in the value of the JCI.

The Influence of Exchange Rates on JCI

From the results of the regression analysis, it can be seen that there is a significant relationship between the independent variable "Exchange Rate" and the dependent variable "JCI" (Composite Stock Price Index). The unsigned coefficient for the "Exchange Rate" is around 8.301, with a value of the signed coefficient (Beta) of about 0.920, indicating that every increase of one unit in the "Exchange Rate" corresponds to a decrease of about 0.920 standard deviations in the "JCI". A very small p-value at 0.000 indicates that this relationship is statistically significant. Thus, it can be concluded that the "Exchange Rate" has a significant influence on the movement of the JCI.

The results of the regression analysis show that there is a significant relationship between the independent variable "Exchange Rate" and the dependent variable "JCI" (Composite Stock Price Index). This indicates that changes in the currency exchange rate have an impact on the movement of the JCI.

The unsigned coefficient for the variable "Exchange Rate" is about 8.301. This means that every increase of one unit in the currency exchange rate correlates with a decrease of around 8,301 units in the JCI.

The value of the standardized coefficient (Beta) is about 0.920. This coefficient gives an idea of how strong the relationship between the two variables is after controlling for their variability. A high Beta value indicates that the "Exchange Rate" has a significant influence on the movement of the JCI.

A very small p-value of 0.000 indicates that the relationship between the exchange rate and JCI is statistically significant. This means that the likelihood of this relationship occurring by chance is very low, so the results can be considered as strong evidence to support the relationship between the exchange rate and the JCI.

Based on the results of the regression analysis, it can be concluded that the exchange rate has a significant influence on the movement of the JCI. Therefore, changes in currency exchange rates can be a factor that needs to be considered in analyzing JCI movements in the stock market.

The results of this study are by the research (Melyani & Esra, 2021)which concludes that there is a significant influence between the exchange rate on the JCI. So did other research (Permaysinta & Sawitri, 2021) concluded that there is a significant influence between the exchange rate and the JCI, where every increase in the exchange rate will cause a decrease in the JCI. The rise and fall of the JCI are influenced by the exchange rate (Nour Halisa & Annisa, 2020). Investors in this case want a low exchange rate so that the JCI is high (Ardian et al., 2024). This happens because every increase in the exchange rate causes a decline in the JCI (Paryudi, 2021). This also applies to the opposite condition where every time there is a decrease in the exchange rate, there is an increase in the value of the JCI.

The Influence of Interest Rates on JCI

The results of the analysis show that interest rates have a significant influence on the JCI, with a regression coefficient (B) of 0.978 and a t-value of 2.436, with a significance level (Sig.) of 0.018. This indicates that an increase of one unit in the interest rate will increase to 0.978 units in the JCI, after controlling for other variables in the model.

The data shows that there is a significant relationship between interest rates and JCI. A significant regression coefficient (B) of 0.978 indicates that there is a correlation between the two variables. This means that when interest rates change, the JCI tends to also change.

The regression coefficient (B) of 0.978 indicates that for every increase in interest rates, the JCI will decrease by 0.978 units. A t-value of 2.436 indicates that the regression coefficient is statistically significant because the t-value exceeds the predetermined significance threshold.

The significance level (Sig.) of 0.018 indicates that the relationship between interest rates and JCI is statistically significant at a confidence level of 95%. Thus, there is enough evidence to reject the null hypothesis that there is no relationship between the two variables.

The analysis noted that the effect of interest rates on JCI has been controlled for other variables in the model. This shows that the increase in the JCI that is

Volume 9, Issue 1, 2024
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observed is specifically related to interest rates, and is not caused by other factors that may affect the JCI.

The results of this analysis imply that investors and market participants can take into account interest rate movements in making their investment decisions. When interest rates rise, they can anticipate a potential increase in the JCI, while a decrease in interest rates can be a potential signal for a decline in the JCI.

Although the results of the analysis show a significant relationship between interest rates and JCI, it is important to remember that the analysis may have limitations. For example, other variables are not included in the analysis model that can also affect the JCI, such as political conditions, global economic factors, or regulatory changes (Hermawan & Purwohandoko, 2020).

The results of this study are by the research (UD Prathama, 2023) which concludes that there is a significant influence between interest rates on JCI. So is the research (Sari, 2019) concluded that there is a significant influence between the interest rate and the JCI, where every increase in interest rates will cause a decrease in the JCI. The rise and fall of the JCI is influenced by interest rates. Investors in this case want low interest rates so that the JCI is high (Melyani & Esra, 2021). This happens because every interest rate hike causes a decline in the JCI.

The Influence of Bitcoin, Exchange Rates, and Interest Rates on JCI

The F (Simultaneous) test is used to determine whether all the independent variables included in the model have a joint influence on the bound variable or not. The results of ANOVA analysis show that a regression model that uses Bitcoin variables, interest rates, and Nilai_tukar as predictors significantly affects the JCI ($F(3, 56) = 112{,}359$, $p < .001$). This means that these three variables together contribute significantly to the variation in the JCI.

This analysis uses the F test (Simultaneous) or the F test to determine whether all the free variables included in the regression model have a joint influence on their bound variables. In this context, the free variables that are included are Bitcoin, interest rates, and Nilai_tukar while the bound variable is the JCI (Composite Stock Price Index). The results of ANOVA analysis show that the regression model significantly affects the JCI ($F(3, 56) = 112{,}359$, $p < .001$).

F Test (Simultaneous): The F test is used here to evaluate the overall significance of the regression model. A high F-number indicates that at least one independent variable in the model makes a significant contribution to variation in the bound variable. Here, the F value is 112,359, which is a measure of the overall significance of the model to the JCI.

A p-value of less than .001 indicates that this result is statistically significant. In other words, there is very strong evidence that all independent variables together or simultaneously have a significant influence on the JCI.

From these results, it can be concluded that Bitcoin, exchange rates, and interest rates, together contribute significantly to the variation in the JCI. In this context, it is assumed that changes in Bitcoin, exchange rates, and interest rates together can affect changes in the JCI.

The results of this study are by the research (Saputra & Purwanto, 2023) which concludes that there is a significant influence between Bitcoin price, exchange rate, and interest rate together to JCI. So did other research (Putra & Robiyanto, 2021) concluded that there is a significant influence between Bitcoin price, exchange rate, and interest rate together against the JCI, where every increase in Bitcoin price, exchange rate, and interest rate together will cause a decline in the JCI.

The rise and fall of JCI is influenced by the rate of Bitcoin price, exchange rate, and interest rate together. Investors in this case want the Bitcoin price, exchange rate, and interest rate together low so that JCI is high (Fahrani & Bachtiar, 2022). This happens, because every time there is an increase in Bitcoin price, exchange rate, and interest rate together causing a decline in JCI (Sihombing et al., 2021). This also applies to the opposite condition where every decrease occurs in Bitcoin price, exchange rate, and interest rate together then there was an increase in the value of JCI (Luxmana & Octafiyani, 2022).

CONCLUSION AND RECOMMENDATION

Based on the results of the first hypothesis test, it can be concluded that there is a significant influence between bitcoin on the Jakarta Composite Stock Price Index (JCI). The non-standardized coefficient for Bitcoin is around 8.956E-007, while the standardized coefficient (Beta) is around 0.299, indicating that every increase in the price of Bitcoin affects an increase of 0.299 standard deviations in the JCI. A significant p-value of 0.020 indicates that this relationship is statistically significant. Therefore, it can be understood that changes in the price of Bitcoin can affect the movement of the JCI.

Volume 9, Issue 1, 2024
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www.sajst.org

The results of the second hypothesis test can be concluded that there is a significant relationship between the Exchange Rate and the Composite Stock Price Index. The unequalized coefficient for the "Exchange Rate" is 8.301, with a value of the standardized coefficient (Beta) of around 0.920, indicating that every increase of one unit in the "Exchange Rate" corresponds to an increase of about 0.920 standard deviations in the "JCI". A very small p-value at 0.000 indicates that this influence is statistically significant. Thus, it can be concluded that the "Exchange Rate" has a significant influence on the movement of the JCI.

The results of the third hypothesis test show that the interest rate has a significant influence on the JCI, with a regression coefficient (B) of 0.978 and a t-value of 2.436, with a significance level (Sig.) of 0.018. This indicates that an increase of one unit in the interest rate will increase to 0.978 units in the JCI, after controlling for other variables in the model. Thus, it can be concluded that interest rates have a significant influence on the movement of the JCI.

The results of the fourth hypothesis test show that the F coefficient (Simultaneous) with ANOVA analysis shows that the regression model using the variables Interest_rate, Exchange_rate, and Bitcoin as predictors significantly affects the JCI (F (with a degree of freedom 3; 56) = 112,359, $p < .001$). This means that these three variables together contribute significantly to the variation in the JCI.

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