



## The Influence of Cryptocurrency (Bitcoin), IHSG, Fed Rate, and BI Rate on IDX BUMN 20 Stock Prices

Royhan Agnia Nur Firdaus<sup>1\*</sup>, Arief Bachtiar<sup>2</sup>

Universitas Pembangunan Nasional "Veteran" Jawa Timur

**Corresponding Author:** Royhan Agnia Nur Firdaus [royhan.agnia@gmail.com](mailto:royhan.agnia@gmail.com)

---

### ARTICLE INFO

*Keywords:* Purchasing Decision, Product Quality, Price Perception

*Received :* 11, August

*Revised :* 15, September

*Accepted:* 19, October

©2023 Firdaus, Bachtiar: This is an open-access article distributed under the terms of the [Creative Commons Attribution 4.0 International](https://creativecommons.org/licenses/by/4.0/).



### ABSTRACT

The cryptocurrency market has grown significantly in recent years, with Bitcoin emerging as the dominant player. This research aims to investigate the relationship between cryptocurrency (Bitcoin) prices, the Indonesia Stock Exchange Composite Index (IHSG), the Federal Reserve (Fed) Rate, and the Bank Indonesia (BI) Rate with the stock prices of IDX BUMN20 companies. The study adopts a quantitative research approach, utilizing historical time-series data for the variables of interest spanning a specific period. The data will be collected from reputable financial databases and sources. Multiple regression analysis and White analysis causality tests will be employed to examine the potential influence of these factors on IDX BUMN20 stock prices. The findings from this research are expected to shed light on the interconnectedness of the cryptocurrency market with the traditional stock market in Indonesia and provide valuable insights for investors, policymakers, and market participants. Understanding these relationships can aid in risk management strategies and investment decision-making. However, it is crucial to note that the cryptocurrency market is known for its volatility and speculative nature, which may introduce unique challenges in interpreting the results. Therefore, cautious consideration and expert financial advice.

## **INTRODUCTION**

Investment is a commitment to set aside funds for a certain period with the hope of receiving future payments as returns. Factors to consider in investments include time, expected inflation rate, and uncertainty of future payments (Reilly & Norton, 2007). Investments can take the form of real assets such as gold, land, art, and real estate, as well as securities such as stocks and bonds, with the goal of increasing wealth in the present or future. Investment decisions are crucial in a company's financial function, as the company's value is determined by investment decisions (Fama, 1974). Investors expect to receive returns from their investments. Return is the ratio of profits or losses from an investment or the amount of money invested (Jones, 2006). The goal of returns is to meet the investors' prosperity needs. Investment returns are measured based on the results received over a specific period, usually within one year. The success of an investment depends on the strategy used to achieve the expected returns, which can be lower or higher than the initial investment (Reilly & Norton, 2007).

The capital market and investment play a crucial role in a country's economy. The capital market is where companies can obtain capital by issuing stocks and bonds to the public and investors. On the other hand, investment is the allocation of money or other assets to gain future profits.

The capital market offers various investment instruments, such as stocks, bonds, mutual funds, and other derivative instruments. Investment in the capital market can benefit various parties, including companies, investors, and the overall economy (Kamal & Apriani, 2022).

The capital market plays a significant role in enhancing national economic activities. Through the capital market, companies can easily obtain funding, which, in turn, drives the progress of the national economy. The capital market serves as a platform to efficiently allocate funds between investors and companies through the trading of financial instruments. For investors, the capital market provides investment alternatives that can yield profits with certain risks. Investment risks can be divided into two types: non-systematic risk and systematic risk. Non-systematic risk can be eliminated through diversification or investing in various types of stocks from different sectors, as this risk originates from internal factors of a company and only affects specific stocks or sectors. On the other hand, systematic risk cannot be eliminated because it originates from macroeconomic or market conditions and, if it occurs, will impact all types of stocks. Examples of systematic risks include inflation risk, interest rate risk, and market risk (Tandelilin, 2010).

Market conditions are difficult to predict and are only known after events occur. Therefore, investors in the securities market must continuously monitor market conditions. The stock exchange can be categorized into a generally rising market condition (Bull Market) and a generally declining market condition (Bear Market). Bull market is a favorable market condition, where stock prices tend to rise overall. The development of stock prices can be monitored through average performance and market indices. Investors

compare the return on their investments to the performance of the overall market to assess the success of their investments.

The interest in investments by the Indonesian public has increased significantly during the pandemic, based on data from the Indonesia Stock Exchange (BEI). The number of investors in 2020 increased by 42% compared to the previous year. The investment interest is not only in the stock market but also in cryptocurrencies, real assets, and foreign currencies. This phenomenon is influenced by various factors, such as increased financial literacy and technological advancements (WIWIT KUSUMAWATI, 2020). The increased number of investors in the stock market brings positive effects to the Indonesian economy, and economic entities will have easier access to long-term capital. For example, if companies listed on BEI have easy access to capital, it also creates job opportunities in society, thereby improving the economy. This phenomenon significantly affects the IDX BUMN20 stock index.

Stock trading applications have evolved from the centuries-old stock market. The history of stock trading began in the 17th century in Amsterdam, Netherlands, with the birth of the world's first stock exchange known as the Amsterdam Stock Exchange (Tambunan, 2020). At that time, stock traders gathered in a place called "Beurs van Hendrick de Keyser" to conduct buying and selling transactions of shares and bonds of newly growing companies. Initially, stock trading was done in person, with stock traders gathering at the stock exchange to interact and conduct transactions. However, with the advancement of technology, especially the emergence of the internet, the way stock trading is conducted changed drastically.

In 1971, NASDAQ (National Association of Securities Dealers Automated Quotations) became the first stock exchange to use computerized systems and provide electronic quotes (Norton et al., n.d.). This allowed stock traders to conduct transactions through computer networks without being physically present at the stock exchange. Later, with the development of the internet and information technology in the 1990s, online platforms emerged, enabling retail investors to directly trade stocks through their personal computers. This provided greater accessibility and convenience for investors to engage in trading.

In the 2000s, with the advancement of mobile phone technology, stock trading applications started to emerge. Financial companies and startups developed mobile trading applications that allowed investors to trade stocks through their smartphones. This provided greater accessibility and ease for investors to conduct stock trading anywhere and anytime. Over time, stock trading applications continued to evolve and offer more sophisticated features, such as analytical tools, interactive charts, real-time market news, and stock price notifications. This allowed investors to closely monitor market movements and make better investment decisions.

As a result, stock trading applications have emerged as a result of technological advancements and the need for investors to have easier and faster access to the stock market. This has transformed the way stock trading is

conducted and provided more people with the opportunity to participate in stock investment.

The IDX BUMN 20 index is composed of 20 state-owned enterprises (BUMN) listed on the Indonesia Stock Exchange (BEI). The index was formed in 2017 with the aim of reflecting the performance of Indonesia's capital market from significant BUMN sectors in the national economy (Indeks, n.d.).

BUMNs are companies owned by the government of Indonesia operating in various sectors, such as banking, energy, telecommunications, mining, transportation, and others (Lengkap, Beragam Contoh BUMN Sesuai Bidang Usahanya, n.d.). As state-owned companies, BUMNs are expected to play a crucial role in economic development and national progress. The IDX BUMN 20 index reflects the capital market performance of the largest BUMNs in Indonesia. In this index, each stock has a weight determined based on market capitalization, so stocks with larger market capitalization will have a greater influence on this index.

The formation of the IDX BUMN 20 index is driven by the desire to encourage investor interest in investing in BUMN stocks and to provide an overview of the overall performance of the BUMN sector. With this index, it is expected to provide a positive signal to the Indonesian capital market and attract investor interest both domestically and internationally. In addition to IDX BUMN 20, there is also another major stock index in Indonesia commonly referred to as the IHSG.

The IHSG (Composite Stock Price Index) is a stock market index that reflects the performance of all listed stocks on the Indonesia Stock Exchange (BEI). The IHSG was first introduced on August 10, 1982, with an initial value

## **THEORETICAL REVIEW**

The global financial landscape has witnessed the emergence and rapid growth of cryptocurrencies, with Bitcoin being the most prominent example. Alongside this digital currency revolution, traditional financial markets, including stock markets, continue to be influenced by various factors such as stock market indices, central bank policies, and global interest rates. In Indonesia, the IDX BUMN20 index represents the performance of the country's state-owned enterprises (BUMN) and plays a crucial role in the national economy.

This study aims to investigate the interplay between cryptocurrency (Bitcoin), the Indonesian Composite Stock Price Index (IHSG), the Federal Reserve's interest rate (FED Rate), and Bank Indonesia's interest rate (BI Rate) in influencing the prices of IDX BUMN20 stocks. By understanding the relationship between these factors, investors and policymakers can make informed decisions to optimize their investment strategies and market policies.

Theoretical Framework

### **2.1 Cryptocurrency (Bitcoin) and Stock Prices**

The rise of cryptocurrencies, particularly Bitcoin, has introduced a new dimension to financial markets. As investors diversify their portfolios to include digital assets, the demand for cryptocurrencies may impact traditional stock markets. The scarcity and decentralized nature of cryptocurrencies, including Bitcoin, have led some investors to view them as an alternative store of value and a hedge against inflation, which may influence their investment decisions in traditional stock markets.

## 2.2 IHSG and Stock Prices

The IHSG, as a representative index of the Indonesian stock market, plays a pivotal role in reflecting the overall performance of listed companies. Fluctuations in the IHSG can be influenced by economic indicators, corporate earnings, and domestic and global market sentiments. Investors' perceptions of the Indonesian economy and their confidence in the stability of the stock market may influence their demand for IDX BUMN20 stocks and, consequently, their prices.

## 2.3 FED Rate and Stock Prices

The FED Rate, the benchmark interest rate set by the Federal Reserve, has significant implications for global financial markets. Changes in the FED Rate can impact investor behavior, particularly in emerging markets like Indonesia, as investors may reallocate their funds to take advantage of higher returns in the United States. Additionally, fluctuations in the FED Rate can influence foreign capital flows, affecting the overall demand for Indonesian stocks, including IDX BUMN20 stocks.

## 2.4 BI Rate and Stock Prices

As the official interest rate set by Bank Indonesia, the BI Rate is a key tool for the country's central bank to manage inflation and stabilize the economy. A lower BI Rate can encourage borrowing and investment, potentially leading to increased demand for stocks in the Indonesian market. Conversely, a higher BI Rate may lead investors to seek higher returns elsewhere, reducing the demand for Indonesian stocks.

Based on the theoretical framework, the following hypotheses will be tested in this study:

H<sub>1</sub>: Cryptocurrency (Bitcoin) has a significant influence on the prices of IDX BUMN20 stocks.

H<sub>2</sub>: IHSG has a significant influence on the prices of IDX BUMN20 stocks.

H<sub>3</sub>: FED Rate has a significant influence on the prices of IDX BUMN20 stocks.

H<sub>4</sub>: BI Rate has a significant influence on the prices of IDX BUMN20 stocks.

This study aims to shed light on the intricate relationship between cryptocurrency (Bitcoin), the IHSG, FED Rate, and BI Rate in influencing the prices of IDX BUMN20 stocks. By analyzing these factors, market participants and policymakers can make well-informed decisions to navigate the dynamic landscape of financial markets and optimize investment outcomes. Additionally, the findings of this study may contribute to the existing body of knowledge on the interplay between traditional financial instruments and emerging digital assets in shaping the global financial ecosystem.

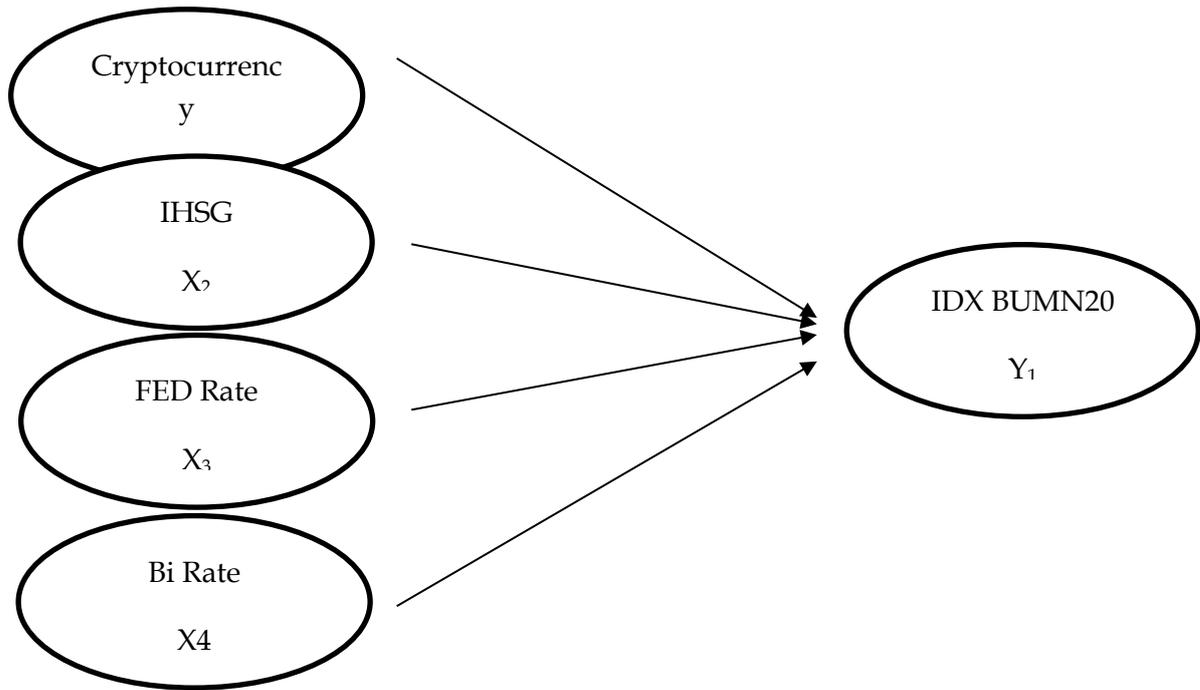


Figure 1. Conceptual Framework

## METHODOLOGY

**Research Approach:** The study adopts a quantitative approach, aiming to produce new findings using statistical procedures to measure the phenomenon. It aims to analyze the influence of independent variables (Cryptocurrency, IHSG, FED Rate, and BI Rate) on the dependent variable (IDX BUMN20 Stock Prices) numerically and statistically. Secondary data is used, collected from various existing sources.

**Research Location and Time:** The research focuses on State-Owned Enterprises (BUMN) listed on the IDX20 stock. The data collection period spans from February 2022 to February 2023.

**Operational Definitions and Variable Measurement:** The dependent variable is IDX BUMN20 Stock Prices (Y), while the independent variables include Cryptocurrency (X<sub>1</sub>), Indonesian Composite Stock Price Index (IHSG) (X<sub>2</sub>), FED Rate (X<sub>3</sub>), and BI Rate (X<sub>4</sub>).

**Data Collection Method:** Secondary data is collected from reliable sources such as the Indonesia Stock Exchange, Bank Indonesia, and other related websites. The data covers the period after the Covid-19 pandemic.

**Data Analysis Method:** Multiple linear regression analysis and correlation analysis are employed. Classic assumption tests are used to check for heteroskedasticity, normality, autocorrelation, and multicollinearity. Descriptive statistics are used for data analysis.

**Regression Analysis:** Multiple linear regression analysis is used to determine the influence of independent variables on the dependent variable. F-test and t-test are conducted for simultaneous and individual significance tests, respectively.

**Hypothesis Testing:** Various hypotheses are tested, including the simultaneous influence of all independent variables and the individual influence of each independent variable on the dependent variable.

By focusing on these key points, the research approach and methodology are succinctly summarized.

## RESULTS

Based on the results of statistical tests, the regression test table used is presented as follows:

Dependent Variable: IDX\_BUMN20  
 Method: Least Squares  
 Date: 07/21/23 Time: 21:49  
 Sample: 1 52  
 Included observations: 52

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	46.77379	68.95750	0.678299	0.5009
BTC	-5.08E-08	2.94E-08	-1.730164	0.0902
IHSG	0.045248	0.009232	4.900992	0.0000
LOG(FED_RATE)	-7.887864	4.857324	-1.623912	0.1111
LOG(BI_RATE)	44.66570	12.15205	3.675568	0.0006

Source: Data processed by Eviews 12

Based on the results of the multiple regression test, we can form the following regression equation:

1. A constant value of 46.773 indicates that if the independent variables namely BTC (X1), IHSG (X2), FED\_Rate (X3), Bi\_Rate (X3) have a constant value (0) then IDX\_BUMN20 (Y) is 46.773.
2. The regression coefficient for the variable 0) then IDX\_BUMN20 (Y) in the research sample decreased by 5,079 units.
3. The regression coefficient for the IHSG variable Y) in the research sample increased by 0.045 units.
4. The regression coefficient for the variable 0) then IDX\_BUMN20 (Y) in the research sample decreased by 7,887 units.
5. The regression coefficient for the variable (Y) in the research sample increased by 44,665 units.

## **DISCUSSION**

The discussion covers the influence of product quality on purchase decisions, an overview of the IDX BUMN20 stock prices, cryptocurrency, the Indonesian Composite Stock Price Index (IHSG), FED Rate, and BI Rate. The IDX BUMN20 index includes state-owned enterprises (BUMN) and regional-owned enterprises (BUMD) stocks. Cryptocurrency, particularly Bitcoin, is a virtual and decentralized digital currency based on blockchain technology. The IHSG reflects the performance of all listed company stocks on the Indonesia Stock Exchange (BEI). The FED Rate is the central interest rate set by the US Federal Reserve, and the BI Rate is the policy interest rate set by Bank Indonesia.

The research data is based on time-series data of State-Owned Enterprises listed on the IDX20 stock. The approach used is quantitative, and the study utilizes multiple linear regression analysis with Eviews Version 12 software.

Overall, the discussion provides insights into various financial aspects, but it can be further summarized to focus on the key points:

**Product Quality and Purchase Decision:** The influence of product quality on purchase decisions was not extensively discussed, and further analysis could be beneficial to understand this relationship better.

**IDX BUMN20 Stock Prices:** The stock prices of state-owned enterprises in the IDX BUMN20 index have been monitored, and their fluctuations may be affected by various factors, including market conditions and company performance.

1. **Cryptocurrency:** The discussion highlights Bitcoin as a well-known cryptocurrency, emphasizing its decentralized nature and blockchain technology.
2. **IHSG:** The IHSG serves as a barometer for stock market activities in Indonesia and reflects the performance of listed company stocks on the Indonesia Stock Exchange.
3. **FED Rate and BI Rate:** The FED Rate and BI Rate are crucial interest rates set by their respective central banks, which can impact various interest rates in the financial market.
4. **Research Data and Methodology:** The study uses quantitative data and employs multiple linear regression analysis to examine the relationship between dependent and independent variables.

In conclusion, while the discussion touches on various financial aspects, it could benefit from focusing on the main findings and implications for future research or stakeholders.

The study conducted an investigation on the interplay between various factors such as cryptocurrencies (Bitcoin), the Indonesian Composite Stock Price Index (IHSG), the Federal Reserve's interest rate (FED Rate), and Bank Indonesia's interest rate (BI Rate) in influencing the prices of IDX BUMN20 stocks. The goal was to understand their relationships, enabling investors and policymakers to make informed decisions for optimizing investment strategies and market policies.

The theoretical framework encompassed the concepts of investment, capital markets, and the role of various investment instruments like stocks and bonds. It also touched upon factors to consider in investments, such as time, inflation rate, and uncertainty, and highlighted the significance of investment decisions in determining a company's value. Moreover, the study emphasized the role of the capital market in economic activities, with a focus on Indonesia's capital market.

**Normality Test:** The data was tested using the Jarque-Bera test, resulting in a probability value of 0.334, indicating that the data follows a normal distribution and passes the normality test.

**Multicollinearity Test:** The Variance Inflation Factor (VIF) was used to test for multicollinearity. All independent variables (BTC, IHSG, Log(FED\_Rate), Log(BI\_Rate)) had VIF values less than 10, suggesting no multicollinearity issues.

**Heteroskedasticity Test:** The data showed no heteroskedasticity issues, as the Prob. F (4, 47) value was 0.0607 (> 0.05).

**Autocorrelation Test:** The Durbin-Watson statistic was used to test for autocorrelation, resulting in a value of 1.939. The test indicated no significant autocorrelation in the regression model.

**Regression Analysis:**

The multiple linear regression model was formed based on the regression analysis results:

$$Y = 46.773 - 5.079X_1 + 0.045X_2 - 7.887X_3 + 44.665X_4 + e$$

The analysis revealed the following:

**Adjusted R-Squared:** The model's Adjusted R-Squared value was 0.362, indicating that 36.2% of the variation in IDX\_BUMN20 prices can be explained by the independent variables (BTC, IHSG, FED\_Rate, BI\_Rate), while the remaining 63.8% is attributed to other variables not included in the study.

**Simultaneous Significance Test (Uji F):** The F-statistic value was 8.239, with a probability of 0.000040 (< 0.05). Thus, all independent variables together significantly influence the IDX\_BUMN20 stock prices during the study period.

**Partial Significance Test (Uji T):** The individual significance tests showed that IHSG and BI\_Rate were significant predictors of IDX\_BUMN20 prices (both with probability values < 0.05). However, BTC and FED\_Rate were not significant predictors.

The study demonstrated that the IHSG and BI\_Rate significantly affect the IDX\_BUMN20 stock prices, while BTC and FED\_Rate do not have a significant impact. The simultaneous effect of all independent variables was significant in influencing IDX\_BUMN20 prices. The results provide valuable insights for investors and policymakers in making informed decisions in the Indonesian stock market.

## **CONCLUSIONS AND RECOMMENDATIONS**

Based on the analysis conducted on the influence of cryptocurrency (Bitcoin), IHSG, Fed Rate, and BI Rate on the stock prices of IDX BUMN20 after the pandemic, the following conclusions can be drawn:

1. Influence of Cryptocurrency (Bitcoin): There is no relationship between the movement of Bitcoin prices and the stock prices of IDX BUMN20. Fluctuations in Bitcoin prices do not affect investor sentiment and capital flow into the stock market, including BUMN20 stocks.
2. Influence of IHSG: IHSG has a significant influence on the stock prices of IDX BUMN20 after the pandemic. The increase or decrease in IHSG can affect individual stock prices, including BUMN20 stocks. Therefore, the movement of IHSG needs to be monitored as an indicator of overall performance of the Indonesian stock market.
3. Influence of Fed Rate: Changes in the interest rate set by the Federal Reserve (The Fed) do not affect the stock prices of IDX BUMN20.
4. Influence of BI Rate: The interest rate set by Bank Indonesia (BI Rate) also has an influence on the stock prices of IDX BUMN20 after the pandemic. Changes in BI Rate can affect the cost of capital for companies, including BUMN20, as well as investment decisions and investor sentiment towards these stocks.

Suggestions for further research or stakeholders:

1. In-depth analysis: Conduct a comprehensive analysis involving additional factors such as company fundamentals, economic news, and market sentiment to better understand the complexity of the financial market and its impact on stock prices.
2. Continuous market monitoring: Stakeholders, including investors and BUMN20 companies, should continuously monitor the financial markets, especially in the digital age and amid global uncertainty, to make well-informed decisions.
3. Portfolio diversification: To reduce investment risks influenced by cryptocurrency, IHSG, Fed Rate, and BI Rate, consider diversifying portfolios to include various financial assets.
4. Adaptive monetary policies and regulations: Monetary authorities, like Bank Indonesia, should adopt adaptive policies and regulations to address cryptocurrency development and global financial market changes, ensuring stability and sustainability in the Indonesian stock market.
5. Better education and understanding: Enhance the understanding and knowledge of investors and stakeholders regarding cryptocurrency to make informed and wise investment decisions.

## **FURTHER STUDY**

It is essential to acknowledge the limitations of this research, and results may vary depending on the context and time period. Hence, further research incorporating relevant factors is recommended to gain a comprehensive

understanding of the influence of  $x$  (Bitcoin), IHSG, Fed Rate, and BI Rate on the stock prices of IDX BUMN20 after the pandemic.

## REFERENCES

- ADI NOOR SUBIANTORO. (2018). PENGARUH INFLASI, BI RATE, KURS USD/IDR, INDEKS SHCOMP, DAN INDEKS NIKKEI 225 TERHADAP INDEKS HARGA SAHAM GABUNGAN (IHSG) (STUDI PADA BURSA EFEK INDONESIA PERIODE 2015-2017).
- Adiputra, A. K., Endrayanto, P., Christmawan, E., & Meilaretasya, N. E. (2022). Analisis portofolio optimal saham yang terdaftar di IDX BUMN 20 Bursa Efek Indonesia. 4, 377-383. <https://doi.org/10.20885/ncaf.vol4.art47>
- Afan Rahmat Hidayat. (2022). PENGARUH RASIO KEUANGAN TERHADAP HARGA SAHAM PERUSAHAAN YANG TERDAFTAR DI IDX30.
- Bank Indonesia. (2020). BI-7 Day Reverse Repo Rate (BI7DRR). <https://www.bi.go.id/id/fungsi-utama/moneter/bi-7day-rr/default.aspx>
- Bappebti. (2020). ASET KRIPTO. [https://bappebti.go.id/resources/docs/brosur\\_leaflet\\_2001\\_01\\_09\\_o26ulbsq.pdf](https://bappebti.go.id/resources/docs/brosur_leaflet_2001_01_09_o26ulbsq.pdf)
- Bima Luxmana, D. (2022). ANALISIS FUNDAMENTAL CRYPTOCURRENCY TERHADAP FLUKTUASI HARGA PADA MASA PANDEMI. 11(1), 41-52.
- Geofanni Nerissa Arviana. (2023). Apa Itu IHSG dan Bagaimana Fungsinya bagi Para Investor? - Glints Blog. <https://glints.com/id/lowongan/apa-itu-ihsg/#.ZCCeluxBw1I>
- Herlianto, D. (2017). TEORI PORTOFOLIO DAN ANALISIS INVESTASI.

- Jubaedah Nawir, S. M. (2020). CRYPTOCURRENCY, NILAI TUKAR DAN REAL ASSET TERHADAP HARGA SAHAM PADA PERBANKAN INDONESIA YANG TERDAFTAR DI BURSA EFEK INDONESIA. *Ekonomi dan Bisnis*, 6(2), 101-120. <https://doi.org/10.35590/jeb.v6i2.1263>
- M. BUDIANTARA. (2012). PENGARUH TINGKAT SUKU BUNGA, NILAI KURS, DAN INFLASI TERHADAP INDEKS HARGA SAHAM GABUNGAN DI BURSA EFEK INDONESIA PERIODE TAHUN 2005-2010 M. BUDIANTARA. *Jurnal Sosiohumaniora*, 3(3).