

The Impact of Covid 19, Rupiah Exchange Rate, and SBI Interest Rate on IDX

Andreani Hanjani¹, Etna Nur Afri Yuyetta², Maylia Pramono Sari³,
Primadhani Dyah Larasati⁴, Aldila Dinanti⁵, Arditya Dian Andika⁶

^{1,2,3,4,5,6} Universitas Diponegoro, Semarang, Indonesia

¹ Universitas Muhammadiyah Yogyakarta, Indonesia

Email: andreani@umy.ac.id

Abstract

This study aims to investigate the effect of Covid 19, Rupiah Exchange Rate, and SBI Interest Rate on Indonesia Stock Exchange (IDX). The data analysis was performed using multiple linear regression. Data collection techniques are carried out by processing data that has been published by Bank Indonesia. The results showed that Covid 19 and SBI Interest Rate did not influence IDX. Meanwhile, Rupiah Exchange Rate positively affected on IDX. This study contributes to understanding the macroeconomic factors that affect on IDX in developing countries such as Indonesia during the financial crisis period caused by the Covid 19 pandemics. Thus, this study as a reference for the Indonesia Government in making policies concerning to IDX problem. This study only revealed three variables as determinants of IDX. The next studies should consider more variables such as inflation, gross domestic product, and the amount of money in circulation. Secondly, the future studies should consider other methods of OLS difference one model can be used to predict well the IDX.

Keywords— Rupiah Exchange Rate, SBI Interest Rate, Covid 19, IDX

I. INTRODUCTION

The COVID-19 pandemic has had an impact on the health and the world economy sectors. Dow Jones and Standard & Poor's show that since March 2020 the value of the company's shares in the US has fallen 20%. Not only the US but also the Indonesia Stock Exchange (IDX) weakened along with market concerns about the impact of the COVID-19 pandemic on the global economy. On January 2, 2020, IDX was at 6283.581, while on April 16, 2020, it was 4625.905 or decreased by 26.38%. Figure 1 shows the IDX changes from January 2, 2020, to April 15, 2020.

The Rupiah Exchange Rate against the dollar depreciated touches the level of sixteen thousand Rupiah against USD 1.00. The condition indicates that the relatively high Rupiah exchange rate has a negative impact on the Indonesian economy. Thus, it creates a threat to the Indonesian industry that borrows

funds from abroad having to pay more debt so that the companies weaken and affect stock prices (Warjiyo, 2013). The rupiah exchange rate affects the presence of foreign investors who invest in the Indonesian capital market.

Other macroeconomic factors that affect IDX. SBI Interest Rate as a reference rate of payment on loans or other investments expressed in annual percentage (Dornbusch, Fischer, & Starz, 2008). The SBI Interest Rate can affect the interest rate on savings and deposits, which are an alternative for the public and/or potential investors to invest their capital.

A number of studies on macroeconomic factors on IDX produce inconsistent findings (Dewi et.al 2014; Kumalasari 2016; Gumilang 2014; Jayanti, et.al 2014; Asih dan Akbar, 2016; Astuti et al. 2013; Ardelia dan Saparila 2018; Wira, Teguh Satya 2020, Antonio et. al. 2013; Attari; 2013; Wijayaningsih et al. 2016). Considering the less convincing findings from

the previous research, this study aims to determine the effect of Covid 19, Rupiah Exchange Rate, and SBI Interest Rate on IDX during the Covid 19 pandemic. Hopefully, this study provides new findings that can complement the findings of previous research on macroeconomic factors which affect IDX in developing countries such as Indonesia during the financial crisis period caused by the Covid 19 pandemic. Thus, this study can be a reference for the government in making policy on IDX.

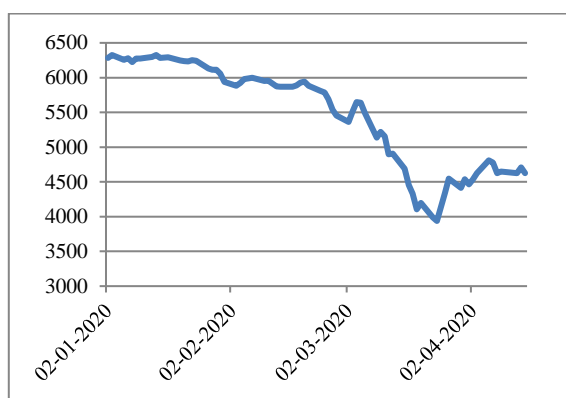


Figure 1. IDX Changes January 2nd to April 15th 2020

II. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Market efficiency is said if the stock price reflects all complete and fast information. Information is not only financial statements, but also social, political, economic, and other information. Fama (1970) argues that market efficiency is a market that reflects all that information provides. An efficient market is a market that reacts quickly to reach a new equilibrium price and reflects the information provided. There are three levels of market efficiency, based on information, namely:

A. Efficient in weak form

A market is said to be in weak form if the stock price reflects all information based on historical prices, sales volumes, and profits. Past stock prices cannot be used to predict future stock prices.

B. Efficient in medium-strong form

A market is said to be in strong-medium form if it provides public information.

C. Efficient in strong form

A market is said to be in strong form if prices fully reflect all information, including historical data, public information, and private information.

Covid 19 and IDX

Stock prices in the market are affected by many events. One of them is the Covid 19 pandemic, which can happen at any time, thus drastically affecting stock prices. The COVID-19 pandemic affects all sectors, including the world's health and economy. The efficient market hypothesis explains the rapid response of information to stock prices. Not only limited to financial information but also social, political, economic, and other information. The concept of an efficient market is to consider how the market responds to information and its effect on security prices. Previous studies have shown that there is a positive and significant effect between COVID-19 and stock price transactions and stock trading volume (Rameli and Wagner 2020; Alfaro et.al 2020; Toda 2020). Therefore, the hypothesis proposed is as follows:

H1: Covid 19 has a positive effect on IDX

Rupiah Exchange Rate and IDX

Rupiah Exchange Rate is the price of the rupiah against the currencies of other countries. Fluctuations in the rupiah exchange rate against foreign currencies will greatly affect the investment climate in the country, especially in the capital market. The companies in Indonesia that have gone public by still relying on imported raw materials from abroad will have a negative impact if the rupiah depreciates or weakens against the US dollar. This will result in an increase in raw materials. The increase in production costs will reduce the company's profit level so that it will drive investors to sell their shares. If many investors do this, it will certainly cause a decline in the composite stock price index. The previous studies have shown that the Rupiah exchange rate has a positive effect on IDX (Febrina et. al., 2020). Based on these arguments, this study proposes the following hypothesis:

H2: Rupiah Exchange Rate has a positive effect on IDX

SBI Interest Rate and IDX

The Bank Indonesia interest rate (BI Rate) is the reference interest rate set by Bank Indonesia to deal with rising inflation in a country. Changes in the BI rate will have an impact on the capital market and financial markets. If the BI rate increases, it will directly increase the interest expense. Companies that have high leverage will have a very heavy impact on the increase in interest rates.

Interest rates will affect people's interest in saving and investing. If there is an increase in interest rates, it will reduce the interest of the public and investors to invest but it will increase the supply of savings. Thus, an increase in interest rates can reduce the company's profitability so that it can affect the share price of the company concerned. In addition to the increase in interest expense, a high BI rate can attract investors to transfer their funds to deposits. This occurs since the increase in the BI Rate will be followed by commercial banks to increase the deposit interest rate. If the deposit interest rate is higher than the rate of return expected by investors, of course, investors will shift their funds to deposits. Moreover, investing in the deposit itself is one type of risk-free investment. The transfer of funds by investors from the capital market to deposits will certainly result in massive stock sales, which will cause a decline in the stock price index. The previous findings show that the SBI Interest rate has a positive effect on IDX (Wira, Teguh Satya, 2020). The next hypothesis is proposed as follows:

H3: SBI Interest rate has a positive effect on IDX

III. RESEARCH METHOD

The data processing technique was carried out by processing the data published by Bank Indonesia for the period 1st December 2019-31st August 2020. The data analysis was carried out using multiple linear regression analysis. The dependent variable of this study was IDX. The

independent variables of this study were Covid 19, Rupiah Exchange Rate, and SBI Interest rate.

Table 1. Variable Description

No	Variable	Measurement
1	IDX	Measured by using return IDX $R \text{ IDX} = \frac{\text{IDX } t - \text{IDX } t-1}{\text{IDX } t-1}$
2	COVID19	Measured by a dummy variable 0 : COVID 19 has not been found in Indonesia 1 : COVID 19 has been found in Indonesia
3	SBI Interest Rate	Measured using the daily SBI interest rate from Bank Indonesia
4	Rupiah Rate	Measured by the daily middle rate from Bank Indonesia

IV. RESULT AND DISCUSSION

Descriptive Statistics

Table 2 shows that in the period December 1, 2019, to August 31, 2020, there were 180 daily IDX. The average IDX during that period has an average of 5290.38 with a standard deviation of 651.91, which means that the value of this index has a fairly high variation from its average value. The average value of the closing stock price index during 9 months ranges from 3989.52 to 6329.31. This indicates that the data are not stationary since the average value and variance tend to change. In table 2, it can be seen that during the period December 1, 2019, to August 31, 2020, the data regarding the rupiah exchange rate against the dollar has an average value of Rp 14549.17 per dollar with a standard deviation of 768.59, which means that the rupiah/dollar exchange rate has a fairly high variation from its average value. The exchange rates during that period ranged from 13612 per dollar to 16741.01 per dollar. From 180 observational data, 62 days of observation show that there is no Covid 19 in Indonesia and 118 days show that there is Covid 19 in Indonesia.

Table 2. Descriptive Statistic

	N	Minimum	Maximum	Mean	Std. Deviation
IDX	180	3989.52	6329.31	5290.38	651.91
SBI	180	4.00	5.00	4.57	.35
Rupiah	180	13612.00	16741.01	14549.17	768.59

Source: SPSS Results

Hypothesis Testing

Table 3 is the result of hypothesis testing. In table 3, it can be seen that the testing results of the effect of Covid 19 on IDX obtain a value of $t = 0.444$ with a significance of 0.658 ($p > 0.05$). The result indicates that hypothesis 1 is rejected. The Rupiah exchange rate can be seen

in table 3 has a value of $t = 4.164$ with a significance of 0.000, so it can be concluded that hypothesis 2 is accepted. Table 3 shows the SBI Rate Interest has a value of $t = 0.596$ with a significance of 0.552 ($p > 0.05$). Thus, it can be concluded that Hypothesis 3 is rejected.

Table 3. Hypothesis Test

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-7.358	8.048		-.914	.362
	COVID	4.413	9.938	.027	.444	.658
	SBI	77.390	129.788	.037	.596	.552
	Rupiah	-.179	.043	-.265	-4.164	.000

Source: SPSS Results

The Effect of Covid 19 on IDX

Hypothesis 1 states that Covid 19 does not affect IDX. The data of IDX movement from December 2019 to March show that there was a decline in IDX, which was initially high, suddenly dropped. This cannot be denied that it is due to the impact of Covid-14 (Corona Virus). IDX fell, but afterward, IDX started to climb up in the period March to August 2020. Tambunan (2020) argued that from the third week of May 2020 until the beginning of June 2020 has shown an increase which indicates stock trading is starting to show an improvement in IDX. Investors can still make a profit. Stocks in the consumer industry sector, the telecommunications sector such as data, towers, and the health sector such as pharmaceuticals and hospitals are stocks that can be investors' choices during the COVID-19 pandemic.

The Effect of the Rupiah Exchange Rate on IDX

The second hypothesis states that the Rupiah exchange rate affects IDX. Fluctuations in the rupiah exchange rate against foreign currencies will greatly affect the investment climate in the country, especially in the capital market. The companies in Indonesia that have gone public by still relying on imported raw materials from abroad will have a negative impact if the rupiah depreciates or weakens against the US dollar. This will result in an increase in raw materials. The increase in production costs will reduce the company's profit level so that it will drive investors to sell their shares. If many investors do this, it will certainly cause a decline in the composite stock price index. This finding is in line with other studies claiming that the Rupiah exchange rate has a positive effect on IDX (Febrina, et.al., 2020).

The Effect of SBI Interest Rate on IDX

The third hypothesis states that the SBI Interest Rate positive effect on IDX. The finding does not support the hypothesis and conclude that the SBI Interest Rate does not affect IDX. The finding is inconsistent with the previous studies linking SBI Interest with IDX (Siska, 2018). Theoretically, market efficiency if the information provided is complete. If the information is complete, the SBI Interest Rate will not affect IDX.

V. CONCLUSION

This study aims to determine the effect of Covid 19, Rupiah Exchange Rate, and SBI Interest Rate on IDX. The results show that Covid 19 does not affect IDX. The test on the rupiah exchange rate against the IDX indicates that the rupiah exchange rate has a positive effect on the IDX. SBI Interest Rate does not affect IDX. This study provides new findings that can improve previous research on macroeconomic factors that affect the Composite Stock Price Index (CSPI) in developing countries such as Indonesia during the financial crisis period caused by the Covid 19 pandemic. Thus, this study can be as a reference for the government in making policy on IDX. Theoretically, market efficiency if the information provided is complete. If the information is complete, the SBI Interest Rate will not affect IDX. Future research should consider more variables such as inflation, gross domestic product, and money supply. Second, further research should consider other methods from the OLS difference one model, which can be used to predict the IDX well.

REFERENCES

1. Alfaro, L.; Chari, A.; Greenland, A.N.; Schott, P.K. Aggregate and Firm-Level Stock Returns during Pandemics, in Real Time; NBER Working Paper No. 26950; National Bureau of Economic Research: Cambridge, MD, USA, 2020. [CrossRef]
2. Antonio, S. M. et al. 2013. The Islamic Capital Market Volatility: a Comparative Study Between In Indonesia and Malaysia. *Bulletin of Monetary, Economics and Banking*, April 2013, 15(4), 391–416.
3. Ardelia, Rezeki Harsono dan Saparila, Worokinasih. 2018. The Effect of Inflation, Interest Rates, and Exchange Rates on the Composite Stock Price Index. *Jurnal Administrasi Bisnis*. 60(2).
4. Astuti, Ria et al. 2013. Analysis Of The Influence Of Interest Rate (Sbi), Rupiah Exchange Rate, Inflation And International Exchange Index on IDX. *Diponegoro Journal Of Social And Politic Of Science*, 1-8.
5. Attari, J.I.M., Safdar. L. 2013. The Relationship between Macroeconomic Volatility and the Stock Market Volatility: Empirical Evidence from Pakistan. *Pakistan Journal of Commerce and Social Sciences*, 7(2), 309-320.
6. Dewi, Ni Made Anita. 2014. The Effect Of Sbi Interest Rate, Exchange Rate, Inflation And Dow Jones Index On The Combined Stock Price Index On Idx. *E-Jurnal Manajemen.*, 3(11), 3291-3308.
7. Dornbusch, Rudiger & Fischer. 2008. *Macroeconomics* (9th ed). Mc Graw – Hill Companies. New York.
8. Fama. 1970. E.F. Efficient capital markets: A review of theory and empirical work. *J. Financ.* 1970, 25, 383–417.
9. Febrina, et al. 2020. the effect of inflation, interest rates, BI, and the rupiah exchange rate on IDX. *JMAP*, 147-156.
10. Gumilang, et. al. 2014. The Effect of Macroeconomic Variables, Gold Prices and World Oil Prices on IDX. *Jurnal Administrasi Bisnis (JAB)*, 14(2), 1–9.
11. Jayanti, Y., et. al.. 2014. The Influence of Inflation Rate, SBL Interest Rate, Rupiah Exchange Rate, Dow Jones Index on IDX. *Jurnal Administrasi Bisnis*, 11(1), 1-10.
12. Kumalasari, D. 2016. The Effect of Exchange Rate (Kurs) Usd / Idr, Sbi Interest Rate, Inflation and Money Supply (M2) on the Composite Stock Price Index (Ihsg) on the Indonesia Stock Exchange (BEI). *Akademika*, 14 (1), 8-15.
13. Ramelli, S.; Wagner, A.F. Feverish Stock Price Reactions to COVID-19. *Rev. Corp. Financ. Stud.* 2020, cfaa012. Available online: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3550274 (accessed on 27 April 2020).
14. Toda, A.A. Susceptible-infected-recovered (sir) dynamics of COVID-19 and economic impact. *arXiv* 2020, arXiv:2003.11221. Available online:

- [https://www.semanticscholar.org/paper/Susceptible-Infected-Recovered-\(SIR\)-Dynamics-of-Toda/da2656c9717e39f06b7a2f7b042e9e9495717d2c](https://www.semanticscholar.org/paper/Susceptible-Infected-Recovered-(SIR)-Dynamics-of-Toda/da2656c9717e39f06b7a2f7b042e9e9495717d2c) (accessed on 27 April 2020).
15. Warjiyo, P. 2013. Indonesia: stabilizing the exchange rate along its fundamental. *BIS Papers*, 73, 177-187.
 16. Wijayaningsih, et. al. 2016. Effect of Bi Rate, Fed Rate, and Rupiah Exchange Rate on IDX. *Jurnal Administrasi Bisnis (JAB)*, 22(2), 69–75.
 17. Wira, Teguh Satya. 2020. The Influence of Inflation Rate, Interest Rate (SBI), Exchange Rate on Stock Prices in Real Estate Company listed on the Indonesia Stock Exchange *Jurnal Ilman: Jurnal Ilmu Manajemen*, 8(1), 1-14.