

THE IMPACT OF THE 2020 HEALTH CRISIS ON EXCHANGE RATES AND STOCK PRICES IN INDONESIA (Study on PT. Jasa Marga Persero)

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Abstract: The infrastructure sector during the health crisis had an impact by declining by around 12% until the end of 2020. One that can cause a decrease in stock prices is the exchange rate. PT Jasa Marga (Persero) Tbk. is one of the companies that showed active stock price activity during the health crisis period. The data sample of this study is to take daily data from exchange rates and stock prices during 2020 with a sample number of 242. Empirical results show that the correlation coefficient is -0.89 , hence the relationship between the exchange rate and stock price is very strong and contradictory. Ha's partial test results were accepted and H_0 was rejected, i.e. the exchange rate was partially significant and affected the stock price. The R square results of 79.8 percent that the exchange rate affects the stock price.

Abstrak: Sektor infrastruktur pada saat krisis Kesehatan harga sahamnya mengalami dampak yaitu dengan menurun disekitar 12% sampai akhir 2020. Salah satu yang dapat menyebabkan penurunan harga saham adalah nilai kurs. PT Jasa Marga (Persero) Tbk salah satu perusahaan yang menunjukkan aktivitas harga saham yang cukup aktif saat periode krisis kesehatan. Sampel data penelitian ini adalah mengambil data harian dari nilai kurs dan harga saham selama tahun 2020 dengan jumlah sampel 242. Hasil empiris menunjukkan bahwa koefisien korelasi $-0,89$, maka hubungan antara kurs dan harga saham sangat kuat dan kontradiktif. Hasil uji parsial H_a diterima dan H_0 ditolak, yaitu kurs secara parsial signifikan dan berpengaruh terhadap harga saham. Hasil R square 79.8 persen bahwa kurs berpengaruh terhadap harga saham.

Keywords: exchange rate, stock price, health crisis

A. INTRODUCTION

The Composite Stock Price Index / JCI during the Health crisis experienced a decline in all sectoral stock prices until the end of 2020. This is one of the arguments for the decline because of data that shows that during the health crisis regulated public activities are not allowed to leave the house, so road traffic becomes quiet. Companies that focus on infrastructure decline confidence from investors because they believe they will not provide decent returns because the company's operations are hampered. The Ministry of Public Works and Public Housing released that the impact of the health crisis resulted in a decrease in road use by the public by more than 80 percent.

The infrastructure sector company that went public with the largest toll road management is held by a State-Owned Enterprise company PT Jasa Marga (Persero) Tbk. This company has managed toll roads of more than 76 percent or more than 531 km. With the health crisis, the revenue of infrastructure companies declined sharply, resulting in a decline in stock prices. According to Sugeng (2019), investors will make decisions to invest their funds in a company, one of which is assessing the value of its stock price.¹

The information that investors need in decision-making is internal company information and macroeconomic conditions. The Company's internal information can be in the form of financial statements and operational / policy-making of the Company for business development, while for macroeconomics it can be in the form of domestic policies, among others; inflation rate and economic stability. Trends that occur in the capital market can also be caused by fluctuations in the rupiah exchange rate or exchange rate. According to Tandelilin (2010), macroeconomics is a factor that contributes to fluctuations in the capital market.²

It is proven that when the *lockdown* policy began to be relaxed and there began to be traffic community activities, it shows that PT Jasa Marga's revenue trend began to creep up. The company strives to rise from the health crisis by making efficiency in various expenses or company operational costs. The same is true for currency exchange rate trends, which also

¹ Sugeng Raharjo, Journal "The Effects of Inflation, Rupiah Exchange Rate, and Interest Rate on Stock Prices on the Indonesia Stock Exchange" (Surakarta: STIE "AUB" Surakarta, 2009), 19

² Eduardus Tandelilin, *Portfolio and Investment* (Yogyakarta: Kanisius, 2010), 54-56.

experience upward and downward trends or fluctuate due to uncertain circumstances due to health crises. This uncertainty has an impact on investors' policy-making, namely changing investment choice patterns in safe or low-risk sectors, including; gold, government bonds, sukuk, or ORI.

During the 2020 health crisis, data from PT Jasa Marga's financial report showed that it earned IDR 9,587.7 billion in revenue, the majority of which was contributed by toll road revenue. This value shows a significant decrease when compared to 2019, reaching 11,114.1 billion rupiah. The Company's net profit also decreased in 2020, this was due to an increase in interest costs.

With these declining results, PT Jasa Marga is still within the standards of the target size set in the Company's Work Plan and Budget (RKAP) 2020. Meanwhile, the assessment of *Key Performance Indicators in 2020* showed that 103 percent of the realization exceeded the plan of 100 percent.

The rate has a significant and influential influence on the composite stock price index.³ Different results show that the exchange rate at food and beverage companies has an influence but is not significant on JCI.⁴ Other results support that the exchange rate has a positive influence on share prices in infrastructure sector companies.⁵ These results show that there is still empirical opposition over exchange rate variables with stock prices.

The hypothesis in this study is as follows.

Ha: Exchange rate variables influence stock price variables.

Ho: Exchange rate variables do not influence stock price variables.

³ Sisca Septyani Devi, Journal "The Effect of Inflation and Exchange Rate on the Composite Stock Price Index Listed on the Indonesia Stock Exchange during the Covid-19 Pandemic Period January-December 2020" (Faculty of Economics, Marshal Suryadarma Aerospace University, 2021), 1.

⁴ Serena Sila Sebo and H. Moch. Nafi, Journal "The Effects of Inflation, Exchange Rates, Interest Rates, and Transaction Volume on Company Stock Prices in Covid-19 Pandemic Conditions" (Accounting and Taxation Universitas Merdeka Malang, 2020), 1.

⁵ Dewi Kartikaningsih, Nugraha, and Sugiyanto, "The Effect of Exchange Rates on Stock Prices of the Infrastructure Sector during the Covid-19 Pandemic" (Journal: Universitas Pendidikan Indonesia Bandung, 2020), 1

B. THEORETICAL BASIS

Investors are parties who have funds that have the aim of obtaining profits when the funds they have are invested in a company. Investors also hold the principles of justice and halal so they are following sharia principles.⁶ The definition of shares is proof of investor ownership of a company that has been invested, then investors have the right to claim on the company's operational results.⁷ The difference between sharia shares is that their operations/business activities are under sharia principles, or not related to haram activities.⁸

The rupiah exchange rate or exchange rate is the value of the rupiah currency which is translated/exchanged into foreign currency. Exchange rates are causes that can affect price movements in the capital market/money market that have investment risks.⁹

The macroeconomic theory proposed by Nordhaus and Samuelson elaborated that the demand and supply of exchange rates can have an impact on the number of various exchange rates, including; *current* rate, spot rate, historical rate, fixed rate, prevailing rate, floating rate, flexible rate, *freely floating rate*, *futures rate*, cross rate.¹⁰ Meanwhile, Dahlan defines the foreign currency exchange rate as the price of 1 currency against the price of other foreign currencies. Changes in the value of the rupiah exchange rate against the US dollar have an unequal influence on each stock either positive or negative.¹¹

When referring to the Islamic concept, the exchange rate policy can be called adhering to *a managed floating system*, fluctuating exchange rates are purely a state in the market that is not government interference. However, if there is a disturbance that causes an imbalance, the government will help to regulate it.¹²

The analysis that can be used for stock pricing is as follows:

⁶ Khaerul Umam, *Sharia Capital Market and Sharia Capital Market Practices*, 85-86.

⁷ Khaerul Umam, *Sharia Capital Market and Sharia Capital Market Practices.*, 113.

⁸ Abdul Aziz, *Manajemen Investasi Syariah* (Bandung: Alfabeta, 2010), 86.

⁹ Tery Herlambang, et al, *Macroeconomics – Theory, Analysis and Policy* (Jakarta: PT. Gramedia Pustaka Utama, 2011), 4.

¹⁰ Paul A. Samuelson and William D. Nordhaus, *Macroeconomics 14th Edition* (Jakarta: Erlangga, 1995), 469.

¹¹ Siamat Dahlan, *Financial Institution Management. Third Edition* (Jakarta. Publishing Institute of the Faculty of Economics, University of Indonesia, 2001), 54.

¹² Adiwarmar Karim, *Islamic Macroeconomics – Third Print* (Jakarta: Rajawali Pers, 2010), 167-168.

1. *Technical analysis*, analysis that relies on stock market data in determining stock prices.
2. *Fundamental analysis*, analysis that adheres to basic data in determining stock prices, among others; data from company finances, such as profits, dividends paid, and company industry conditions.¹³

C. RESEARCH METHOD

This research uses a quantitative approach, namely research using statistical procedures. This quantitative approach shows that the relationships between variables are analyzed using theory objectively.²⁶

Secondary data in the form of daily share price data of PT Jasa Marga (Persero) Tbk, obtained through the website of PT Jasa Marga (Persero) Tbk and Investing.com website, as well as the official website of Bank Indonesia (bi.go.id) for data on the rupiah exchange rate against the US dollar per day as the selling rate and buying rate.

Measurement of exchange rates using the middle rate, which is the exchange rate between the selling rate and the buying rate of foreign currencies against the rupiah and is set by the central bank.²⁷ The middle rate is used as a tool to assess the exchange rate or relative price of the currencies of the two countries traded. The daily share price of PT Jasa Marga (Persero) Tbk is taken from the *close price* during 2020. The population of this study is data on the daily US dollar exchange rate and the daily stock price of PT. Jasa Marga (Persero) Tbk, based on the schedule of securities trading in the regular market of the Indonesia Stock Exchange, Monday to Friday, is 242 data.

¹³ Ibid., 113-114.

²⁶ Wiratna Sujarweni, *Business and Economic Research Methodology* (Yogyakarta: Pustaka Baru Press, 2015), 39.

²⁷ Sadono Sukirno, *Macroeconomics. In Introductory Theory - Third Edition. 21st printing*, 411.

D. DISCUSSION

The research period showed a significant upward movement in the rupiah exchange rate against the US dollar at the end of the first quarter with its highest point at the level of Rp 16,575.00 on the day between the 58th and 59th, which then began to decline again.

Table 1 Descriptive Statistics

Variable	N	Min	Max	Mean	Std. Deviasi
Exchange rate(X)	242	13.572,5	16.575,0	14.516,3	650,5
Stock Price (Y)	242	2.340,0	5.250,0	40.26,8	694,1

Source: SPSS Version 25

The average value of the variable exchange rate of the variable category, the average of 14,516.3 is included in the medium category. This shows that during the health crisis in 2020, the exchange rate fluctuated, resulting in a negative impact because economic stability was disrupted. According to Sukirno, economic stability can be influenced by other factors, including; People's tastes change, fluctuations in export-import prices, inflation, interest rates, reinvestment, and a growing economy.²⁸ Rising and falling rates are signs that investors must understand to assess the company. This follows the theory of Tandelilin, that exchange rates are one of the indicators in macroeconomics that can cause fluctuations in stock prices.²⁹

Table 2 ANOVA Table

Table	Information	Sum of Squares	Mean Square	F	Sig.
Stock Price Exchange Rate	(Combined)	3.980.695,9	17.232,4	2.975	.038
	Linearity	860.383,3	860.383,3	148.515	.000
	Deviation from Linearity	3.120.312,5	13.566,5	2.342	.080

Source; SPSS Version 25

²⁸ Sadono Sukirno, *Macroeconomics. In Introductory Theory - Third Edition. 21st printing*, 402.

²⁹ Eduardus Tandelilin, *Portfolio and Investments*, 56.

Based on the results of the ANOVA test, it can be seen that there is a linear relationship between the exchange rate and stock price, with a Sig. Linearity value of $0.000 < 0.05$. Whereas when based on the value of Sig. *Deviation from Linearity* $0.080 > 0.05$, that there is no linear pattern in the resulting error value, to meet the requirements of linearity.

Table 3 Simple Linear Regression

Variable	Regression Coefficient	t count	Sig.
Constant	17.865,3		
Exchange Rate	-0,95	-30,8	0,000
F Count	949,8		0,000
R Square	0,79		

Source; SPSS Version 25

The results of simple linear regression obtain the following regression equation:

$$Y = 17.865,3 - 0,95X$$

The relationship between exchange rate variables and the share price of PT. Jasa Marga Persero Tbk. has a very strong and negative correlation. With the intention that when the rate rises, it causes the stock price to fall, and vice versa.

Table. 4 Simple Correlation Coefficient Test (R)

Variable		Exchange Rate	Stock Price
Exchange Rate	Pearson Correlation	1	-.893**
	Sig.(2-tailed)		.000
	N	242	242
Stock Price	Pearson Correlation	-.893**	1
	Sig.(2-tailed)	.000	
	N	242	242

** . Correlation is significant at the 0.01 level (2-tailed).

Source: SPSS Version 25

The significance value of Sig. (2-tailed) of $0.000 < 0.01$ indicates that there is a significant correlation between the exchange rate and the stock price. The calculated R-value is 0.893 and the table R-value for N amounts to 242 which is 0.138, so it shows the calculated R-value of $0.893 > 0.138$ R table, that is, there is a significant relationship between the exchange rate and the stock price. As for the R-value calculated at 0.893 with a negative sign, it can be defined that the relationship between the exchange rate and the stock price is opposite, or if the exchange rate rises, the stock price falls, and vice versa.

Table 5 Determinant Coefficient Test (R²)

Model	R	R Square	Adj. R Square	Std. Error of The Estimate
1	.893 ^a	.798	.797	312.38

a. Predictors: (Constant), Kurs

Source; SPSS Version 25

The R square value of 0.798 or equal to 79.8%, that is, the exchange rate has an influence on the stock price by 79.8%, while the rest can be influenced by other variables including; inflation rate and interest rates. This result follows the theory of Alwi that foreign exchange rates are included as an external factor that can affect the movement of company shares.³⁰

These results support research from Devi³¹ and Maghfiroh, namely that the exchange rate has a significant influence on JCI. However, research is contrary to that conducted by Sebo and Nafi that exchange rates have an influence but are not significant for the objects of food and beverage sector companies in Indonesia.

The Health Crisis for infrastructure companies is to provide options for extraordinary events that can affect company operations. Future policies for infrastructure sector companies must maintain financial

³⁰ Z. Iskandar Alwi, *Capital Markets: Theory and Applications First Edition*, 87

³¹ Sisca Septyani Devi, Journal "The Effect of Inflation and Exchange Rate on the Composite Stock Price Index Listed on the Indonesia Stock Exchange during the Covid-19 Pandemic Period January-December 2020" (Faculty of Economics, Marshal Suryadarma Aerospace University, 2021), 1

resilience by structuring equity. Structuring the company's portfolio also needs to be done so that the performance of this business group can *survive* extraordinary circumstances.³²

E. CONCLUSION

In order to ensure the smooth functioning of infrastructure, companies in the sector must take proactive steps to mitigate the risks posed by unexpected events. These risks can include a range of factors, such as natural disasters, financial crises, or health emergencies. Specifically, in the face of health crises, companies must be particularly vigilant in order to minimize the impact of such events. This may involve implementing measures such as contingency planning, workplace safety protocols, and supply chain diversification. By taking these steps, infrastructure companies can help to reduce the potential impact of unexpected events, ensuring that critical services continue to be delivered to communities and organizations that rely on them.

Monitoring macroeconomic risks is an urgent task for any company, as these risks have the potential to significantly impact their business operations and lead to financial losses or even business failure. Therefore, it is crucial for the internal company to prioritize the identification and management of these risks to ensure the long-term sustainability and success of their business in today's ever-changing economic landscape. By being proactive in monitoring macroeconomic risks and developing a robust risk management strategy, the internal company can mitigate the potential impact of these risks and optimize their business performance.

Monitoring macroeconomic risks can provide valuable insights into potential threats to a company's financial stability. By staying vigilant and proactive in identifying and addressing these risks, a company can better position itself to weather economic downturns and maintain its financial resilience. This can help ensure the company's long-term success and sustainability, even in challenging market conditions. Furthermore, it can assist in attaining the company's goals.

³² Jasa Marga. Jasa Marga Annual Report 2020, 74.

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