DETERMINANTS OF THE VOLATILITY OF THE RUPIAH EXCHANGE RATE AGAINST THE DOLLARSAMERICA IN THE MIDDLE OF THE COVID-19

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ABSTRACT

Liberalization, regionalization, and globalization have made the inflow of goods, services, and capital easier to break through the regional boundaries of a country, and the barriers have continued to decrease for global trade or business. cross border. The consequences of liberalization, regionalization, and globalization demand the existence of a country's economic transparency which can cause concerns for every country, including Indonesia, especially regarding the stability of its currency exchange rate. During the Covid-19 Pandemic, at the end of March 2020, the Rupiah exchange rate against the US Dollar weakened by 18% compared to its position in December 2019 (before the Covid-19 Pandemic). The exchange rate of the Rupiah against the US Dollar is continuously fluctuating and tends to weaken. The volatility of the Rupiah exchange rate against the US Dollar and its large volatility over a long period can disrupt the economy as a whole. The purpose of this research is to analyze the factors that influence the volatility of the Rupiah exchange rate to the US Dollar. This research uses inferior information on duration (time series) from 2009 to 2020 (information per year). The results of the research can be concluded that the JCI, Trade Balance, Foreign Loans, Inflation, and Interest Rates have an important influence on the volatility of the Rupiah exchange rate to the US Dollar either simultaneously or partially.

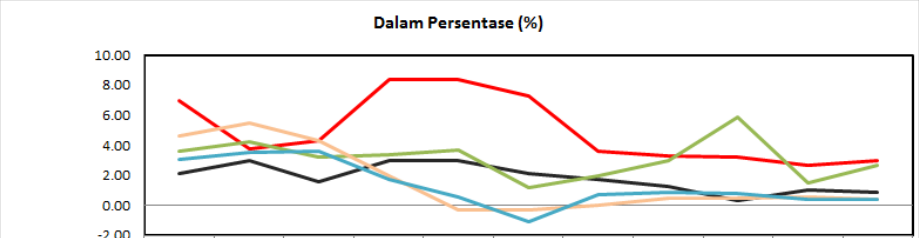
Keywords: *Covid-19, Foreign Debt, Inflation, Interest Rates, JCI, Rupiah Exchange Rate, Trade Balance*

A. INTRODUCTION

One of the major economic indicators that are sensitive to external economic spillovers is the exchange rate (currency rate). In this regard, currency conversion rates reflect economic forces such as the effects of stresses and the effects of regional economies and outlines (Barguellil et al., 2018). Then it becomes natural that the rate of converting a country's currency to the currency of another country then becomes an indication of the basic power of the country's economy. In other words, Bank Indonesia as the Monetary Sovereign must be able to formulate and apply monetary policy on currency conversion rates that can suppress the escalation of a country's economic competitiveness (Pikahulan, 2020).

Countries with large levels of economic abundance tend to consistently prevent inflation at small levels, as a result, their currency figures become stronger than other countries with large inflation rates as well as Indonesia. About that will bring up purchasing power or the purchasing power of developed countries is greater than that of other countries with high inflation rates. Countries classified as having large abundance levels were Switzerland, Germany, and Japan at the end of the 20th century, after which America and Canada followed suit as countries with low inflation rates (Yolanda, 2017).

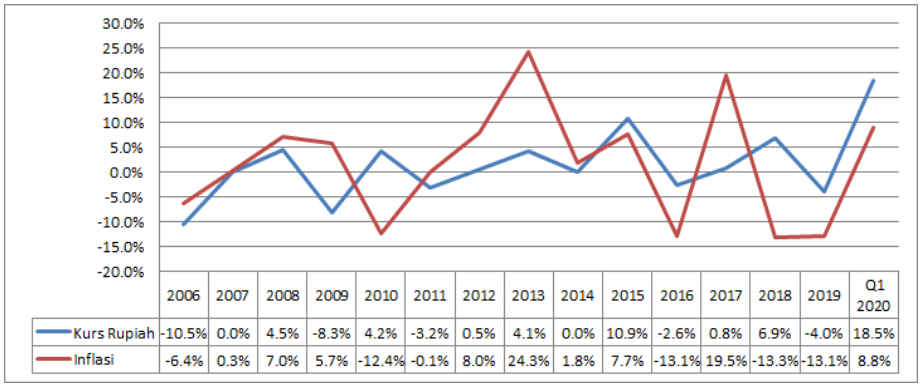
For countries with high inflation rates such as Indonesia, the exchange rate of its currency will be vulnerable to a decline in the currencies of counterparties of countries conducting international trade with Indonesia (Yazid, 2018). Figure 1 shows that Indonesia's inflation rate is higher than other ASEAN countries, except in 2018 the Philippines recorded a higher inflation rate than Indonesia. Meanwhile, Figure 2 shows an increase in the inflation rate followed by a weakening of the Rupiah against the US Dollar.



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Q1 2020
Indonesia	6.96	3.79	4.30	8.38	8.36	7.26	3.60	3.30	3.20	2.70	3.00
Malaysia	2.10	3.00	1.60	3.00	3.00	2.10	1.70	1.30	0.30	1.00	0.90
Filipina	3.60	4.20	3.20	3.40	3.70	1.20	2.00	3.00	5.90	1.50	2.70
Singapura	4.60	5.50	4.30	2.00	-0.30	-0.30	0.00	0.50	0.50	0.60	0.40
Thailand	3.10	3.50	3.60	1.70	0.60	-1.07	0.70	0.90	0.80	0.40	0.40

Source: Bank Indonesia and processed by the author

Figure 1.
Inflation Rate Developments in 5 ASEAN Countries 2010 – Q1 2020



	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Q1 2020
Kurs Rupiah	-10.5%	0.0%	4.5%	-8.3%	4.2%	-3.2%	0.5%	4.1%	0.0%	10.9%	-2.6%	0.8%	6.9%	-4.0%	18.5%
Inflasi	-6.4%	0.3%	7.0%	5.7%	-12.4%	-0.1%	8.0%	24.3%	1.8%	7.7%	-13.1%	19.5%	-13.3%	-13.1%	8.8%

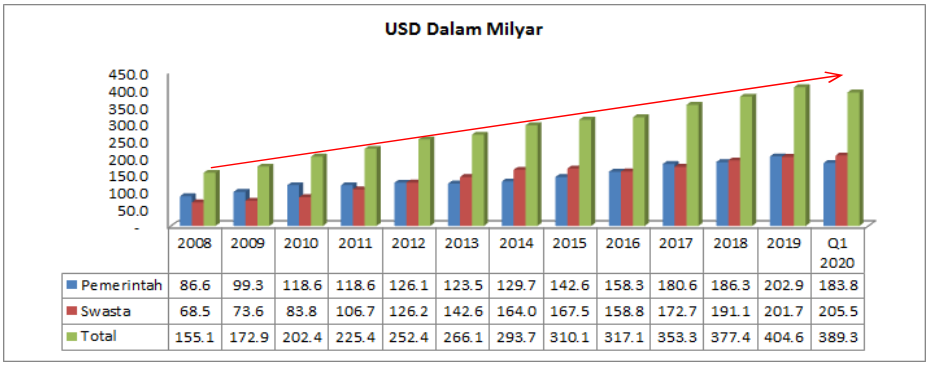
Source: Bank Indonesia and processed by the author

Figure2.
The Movement of the Rupiah Exchange Rate Against the US Dollar Versus the Movement of the Inflation Rate, 2000 – Q_1 2020

The development of the Rupiah exchange rate against the US Dollar from 2008 to March 2020 experienced a significant depression/weakening against the US Dollar, which was 49%. The deteriorating exchange rate of the Rupiah against the US Dollar that occurred in March 2020 was 18% compared to December 2019 (Chasanah, 2021) The Global COVID-19 pandemic has put great pressure on global financial markets. This situation has an effect on fluctuations in the stock market, bond market, and foreign exchange market (foreign exchange) all over the world. Central banks and world governments have responded to this situation by reducing interest rates, injecting liquidity, and other fiscal incentives. The Fed has even cut interest rates to nearly 0% and injected liquidity of USD 700 billion through the purchase of Treasury Bonds and Mortgage Backed Securities (Zahroh et al., 2020).

Bank Indonesia urges the Indonesian economy to stop lowering the reference is the BI-7 Days Reverse Repo Rate to 4% per annum, implemented in July 2020. The depreciation of the reference interest rate is accompanied by a decrease in the JIBOR (Jakarta Interbank Offered Rate) interest rate and it is hoped that the low-interest rate will reduce inflation and stabilize the Rupiah exchange rate against the US Dollar in particular (Yi-Wei, 2020).

The high value of External Debt can push the demand for US Dollar liquidity to be high and if the supply of US Dollar liquidity in the market is limited it can cause the Rupiah exchange rate to weaken against the US Dollar. As of the second quarter of 2020, Indonesia's foreign debt was recorded at USD 408.6 billion or 37,3% of GDP (Gross Domestic Growth), and dominated by long-term External Debt, which is 89% of the Total External Debt (Pellu, 2019). Based on the Law on Foreign Debt Finance, the maximum allowed is 60% of GDP. Therefore, according to the Governor of Bank Indonesia and the Minister of Finance of the Republic of Indonesia, Indonesia's foreign debt is still in a safe position at this time (Suryokumoro et al., 2020) Figure 3 shows the development of Indonesia's Foreign Debt both by the Government and the private sector, where from 2008 to the position of Quarter 1 (Q_1) of2020 Indonesia's Foreign Debt in total increased by 113%.



	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Q1 2020
Pemerintah	86.6	99.3	118.6	118.6	126.1	123.5	129.7	142.6	158.3	180.6	186.3	202.9	183.8
Swasta	68.5	73.6	83.8	106.7	126.2	142.6	164.0	167.5	158.8	172.7	191.1	201.7	205.5
Total	155.1	172.9	202.4	225.4	252.4	266.1	293.7	310.1	317.1	353.3	377.4	404.6	389.3

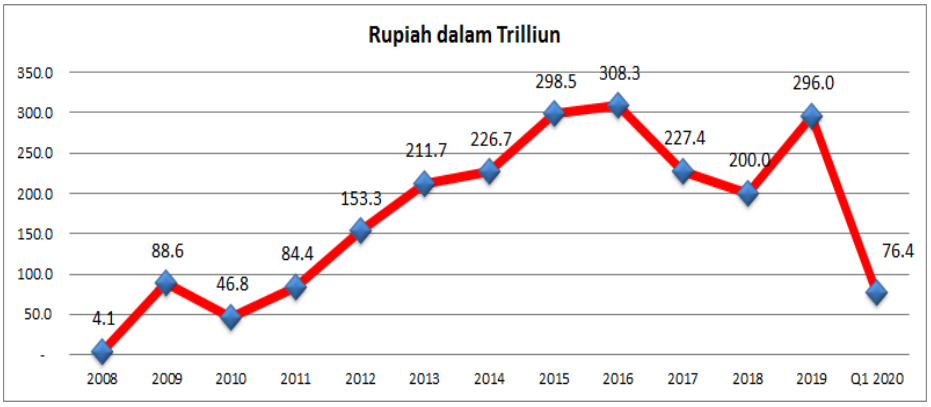
Source: The National Statistics Agency and processed by the author

Figure 3.
Indonesia's Foreign Debt Development 2008 – Q_1 2020

Foreign exchange reserves at that time were only USD 14,4 billion, which could not cover the need for the US Dollar to pay foreign debts and to pay for imports, causing import activities to stagnate, while the availability of domestic goods was not sufficient to meet people's needs, causing inflation to rise to 54,5%. High inflation causes people's purchasing power to decrease drastically and results in a sharp decline in economic development, which is reduced by 13,1% (Prameswari et al., 2019)

The Indonesian government in implementing development, especially infrastructure development aims to improve the welfare of the Indonesian people and minimize the gap between urban communities and rural communities by using partial financing of debt, one of which is by issuing SBN (Securities) both in conventional form and in the form of Sharia, but with income, The government, especially those originating from an unbalanced fiscal, causes a state budget deficit which from time to time increases (Muktiyanto & Aulia, 2019).

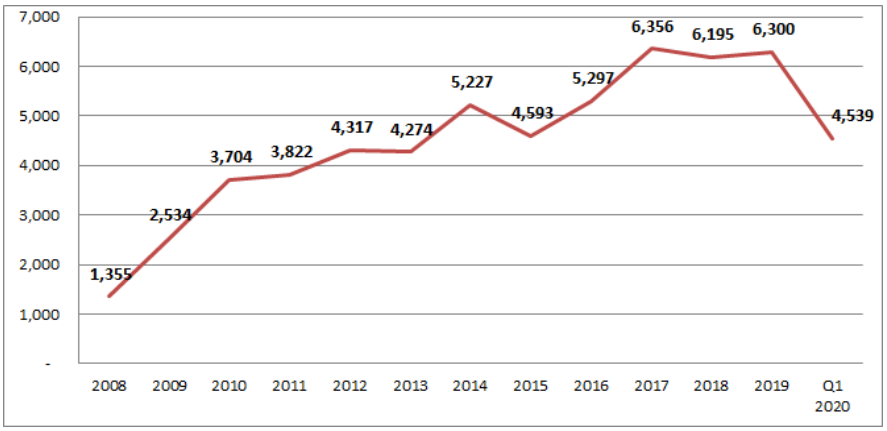
The impact of the Covid-19 pandemic where the government needs large funds to deal with Covid-19 including financial assistance provided to economically disadvantaged communities, On the other hand, reduced tax revenues so that the Ruler through the Rule of Law instead of Law (PERPU) Number 1 of 2020 stipulates that the 2020 State Budget shortfall is allowed a maximum of 6,34% of GDP. The amount of the APBN shortfall will be reduced regularly to a value of 3% of GDP until 2023. Figure 4 shows the realization value of the APBN shortage which leads to an increase year on year. The value of the budget shortfall in the 1st quarter of 2020 is the value from January 2020 to March 2020 (year-to-date value) (Nasution et al., 2020).



Source: The Ministry of Finance and processed by the Author

Figure 4.
Development of the 2008 – Q_1 2020 State Budget Deficit

The Covid-19 endemic shared an important impact on stock price changes which can be proven from the results of research on stock prices after Covid-19 compared to the same price. Stocks before Covid-19 experienced a decrease with a significance value of 0,00 < 0,05 (Securities Journal) (Zulfitra & Tumanggor, 2020). Other factors besides Covid-19 are the sentiment of the trade war between the United States and China and the slowing economic growth even minus 5,32% in the second quarter of 2020, making foreign investors in particular to release shares resulting in capital outflow accompanied by the weakening of the Rupiah exchange rate (Arthamevia et al., 2021). Figure 5 shows that in the first quarter of 2020, the Jakarta Composite Index (JCI) decreased by 28% compared to the Jakarta Composite Index in the fourth quarter of 2019.



Source: Bank Indonesia and processed by the author

Figure 5.
JCI Developments, 2008 – Q1 2020

Several previous studies have examined the factors that influence the volatility of the Rupiah against the US Dollar, including the stock index (Okechukwu et al., 2019) (Bagh et al., 2017), (Mechri et al., 2019), (Mlambo et al., 2013), (Haryogo, 2013); External Debt (Kumar et al., 2019), (Palić et al., 2018), (Wahyuningsih & Ningsih, 2019), (Odera, 2015), (Saheed et al., 2015);

Trade Balance (Bustaman & Jayanthakumaran, 2007), (Arifin & Mayasya, 2018), (Wulansari, 2017); Inflation (Keefe, 2020), (Okechukwu et al., 2019), (Ozcelebi, 2018); Interest Rates (Okechukwu et al., 2019), (Kasman et al., 2011) and (Wulansari, 2017).

B. LITERATURE REVIEW

Currency Exchange Rates

The actual cash exchange rate is the "cost" or "conversion scale" of one country's money against another foreign country, while the Rupiah exchange rate is the cost of the Rupiah against different monetary forms of the country. For example, the conversion scale of the Rupiah to the US Dollar, the scale of swapping the Rupiah against the Yen, etc. (Sukirno, 2012). A country is characterized as facing a money emergency if the scale of its conversion undergoes a major change, in addition, a country facing a money emergency is mostly described by strategic adjustments to the framework for determining the scale of exchange (Kumar et al., 2019).

The opinion of other economists related to currency exchange rates as stated by Paul R. Krugman and Maurice and quoted from (Hasibuan, 2012) that the scale of swapping is one of the main costs in an open economy that has a very large effect on the economy. current record balance and other macroeconomic factors. (Barguellil et al., 2018) explains that changes in stock prices can affect the inflow and outflow of capital, which will result in changes in currency figures (Haryogo, 2013) suggesting that in multivariate testing there is a one-way effect of stock market indicators to numbers of change.

Balance of Trade

Bank Indonesia thinks that the Trade Balance is the contrast between a country's tariff rates and imports in world exchanges. If the tariff value of a country is more prominent than its imports, it means that the country has a positive balance of exchange. Meanwhile, if the value of imports is greater than those sent, it means that there is a shortage of the balance of exchange (Negative Trade Balance). The meaning of this balance of trade includes tariffs and imports of labor and products at a fair global exchange rate, except for domestic exchanges (Thirafi, 2020). Research on the relationship between the trade balance and the volatility of the rupiah exchange was conducted by Purwono R. Mucha K. Mubin M. K. in 2018 (Purwono et al., 2018).

Foreign Debt

Bank Indonesia thinks that Indonesia's external debt is a foreign obligation of the public, national (Bank Indonesia), and private authorities. Government Foreign Loans are obligations claimed by the central government, which consist of, respectively, multilateral, credit offices, businesses, leasing, and Government Securities (SBN) granted abroad and owned by non-residents in the country. In the Presidential discourse dated August 16, 1979, it was reaffirmed that foreign guidelines/obligations are an easy way to accelerate progress so that the

Indonesian people are not trapped in the problem of lack of capital which keeps us as a country with the most disadvantaged people. Liability is a choice reached for different objective reasons. For those level-headed reasons, there is a cost of criticism and there is also a cost of development. The heap of sincerity implies that the obligation can be taken as a source of financing because of the urgency of the need that requires quick settlement. Meanwhile, the development burden implies that the obligation is considered a financing option that through various special and monetary calculations is deemed ready to provide benefits (Muktiyanto & Aulia, 2019). Research on the relationship between foreign debt and the volatility of the rupiah exchange was conducted by Handoyo R. D. Sari A. D. P. in 2022 (Handoyo et al., 2022).

Inflation

Inflation is defined in many different ways, but all of the meanings cover the same fundamentals. (Dastgerdi, 2020) states that inflation is a condition where there is an increase in the level of numbers in a total way, whether for goods, administration, or artificial factors. This meaning proves the weakening of purchasing power which is accompanied by a decrease in the original number (natural) of a country's money. Another definition explains that inflation occurs when there is an imbalance (disequilibrium) between the total interest and the loan, which is more concerned with the total interest than the total supply. For this situation, the level of totality figures reflects the relationship between the development of activity and product capacity and the development of cash. If product development comes more than money advances, downfall will occur (Labonte, 2011).

C. RESEARCH METHODS

The information used in this research is secondary information which is collected using the Illustrations used in this research elastic information from 2009 to 2020 (quarterly data) related to the Composite Stock Price Index, External Debt, Trade Balance, Inflation, Interest Rates, and the volatility of the Rupiah against the US Dollar. The data collected by the researchers came from various sources related to the research theme, namely Bank Indonesia, the Financial Services Authority, the Central Bureau of Statistics, and the Ministry of Finance. Thus, the number of illustrations used in this research is 45 (fourty five) illustrations, which are quarterly or yearly information from the 1st year of 2009 to the 1st year of 2020.

The exploration technique used is Explanatory Research investigation or theoretical research through clarification. Research Logic is a scientific instrument to clarify causality between factors by testing theories. Organization of clarification is to describe speculation or clarify the relationship of one variable to another, therefore informative examination uses theory testing by utilizing inferential insights (for hypothesis testing). According to (Bungin, 2013), the theorem of agreement in this research can be formulated by: The Volatility of the Rupiah Exchange Rate against the US Dollar = Y, the function of the dependent

variable is an intermediate variable that gets simultaneous influence by the determining factors, then the model format becomes:

$$Y = f(X_1, X_2, X_3, X_4, X_5)$$

The regression analysis technique in this study uses an approach with an equation model, namely:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + €_t$$

With β_0 to β_5 as Constant Equation 1 – n, $€_t$ as Standard Error equation 1 – n, Y as Volatility of Rupiah Exchange Rate against US Dollar, X_1 as Composite Stock Price Index (CSPI), X_2 as External Debt, X_3 as Trade Balance, X_4 as Inflation, X_5 as Interest Rate.

In this research, the normality test uses the Jarque-Bera test (JB Test). To test more accurately, to determine whether the information is fairly distributed or not. To identify the presence or absence of multicollinearity, the Matrix correlation test is used. The procedure used to test heteroscedasticity is to use the White Heteroskedasticity Test. To detect the presence or absence of autocorrelation, the procedure used to test autocorrelation is to use the Lagrange Multiplier (LM) or BG (Breusch Godfrey) test. In research, time series information often encounters non-stationarity at the series level. So it is necessary to try differentiation once or twice to make the information stationary. The unit base test was tested using the Augmented Dicky Fuller (ADF) procedure.

Simultaneously test the hypothesis using the $F_{statistical}$ test with a 95% confidence level, so that the alpha precision level is 0,05. Partial hypothesis test using t_{test} with alpha 0,005. The coefficient of determination (R^2) is used to measure the model's ability to explain independent variables independen (Gujarati, 2013).

D. RESULTS AND DISCUSSIONS

Unit Root Test and Classical Assumption

Testing the unit root group at the first level for all variables using the ADF (Augmented Dickey-Fuller) procedure produces the ADF value for the Rupiah Exchange Rate Volatility variable of 5,356937 with Prob. value 0,0001 ≤ 0,05, the ADF value for the Composite Stock Price Index variable is 5,690963 with Prob. The value of 0,0001 ≤ 0,05, the ADF value for the External Debt variable is 6,113415 with Prob. The value is 0,0000 ≤ 0,05, and the ADF value for the Trade Balance variable is 6,572939 with Prob. The value is 0,0000 ≤ 0,05, and the ADF value for the inflation variable is 7,094076 with Prob. the value of 0, 0000 ≤ 0,05 and the ADF value for the interest rate variable is 5,356937 with Prob. value 0,0004 ≤ 0,05 at that level. Thus, it is stated that all stationary variables at the resulting level and equations are cointegrated, or do not produce spurious regression for the three models. The results of the classical assumption test stated that the three models had met the criteria of normality, multicollinearity, autocorrelation, and heteroscedasticity or were declared to meet the criteria.

Descriptive Analysis

From descriptive statistical data for the period 2009 to 2020 Quarter 1, the following data are obtained: The movement of the Rupiah Exchange Rate against the US Dollar has an average value of 1,02% with the highest movement value of the Rupiah against the US Dollar at 17,74% occurring in the first quarter of 2020 and the lowest movement value of the Rupiah against the US dollar -11,66% occurring in the second quarter of 2009, with a standard deviation or an average deviation value of 5,20%.

The movement of the Composite Stock Price Index (JCI) has an average value of 3,24% with the highest movement value of the Composite Stock Price Index (JCI) of 44,07% occurring in the second quarter of 2009 the value of the movement of the Jakarta Composite Index (JCI) the lowest of –27,95% occurred in the first quarter of 2020, with a standard deviation or average deviation value of 10,49%. Movement of External Debt has an average value of 2,18% with the highest value of movement of External Debt of 7,73% occurring in the third quarter of 2009 and the lowest value of movement of External Debt of -3,79% occurring in the first quarter of 2009-2020, with a standard deviation or an average deviation value of 2,33%.

The movement of the Trade Balance has an average value of 88,04% with the highest value of the movement of the Trade Balance of 3,182,76% occurring in the fourth quarter of 2013 and the lowest value of the movement of the trade balance of -516% occurring in the third quarter of 2014, with a standard deviation or average the average deviation value is 529,26%. Inflation movement has an average value of 0,24% with the highest inflation movement value of 84,55% occurring in the fourth quarter of 2014 and the lowest inflation movement value of –53,91% occurring in the second quarter of 2009, with a standard deviation or average deviation value of 25,42%. Interest rate movements have an average value of -1,25% with the highest interest rate movement of 33,58% occurring in the third quarter of 2013 and the lowest interest rate movement of -25,71% occurring in the third quarter of 2017, with a standard deviation or average deviation value of 12,39%.

Inferential Analysis

The influence of aspects of the composite stock price index, foreign debt, trade balance, inflation, and interest rates either simultaneously or partially on the volatility of the rupiah against the US dollar. Through multiple linear regression which proves the causal relationship between the independent variables and the dependent variable are as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \varepsilon_1$$

Where Y is volatility of the rupiah exchange rate against the dollar, β_0 as Constant, X_1 as Composite Stock Price Index (JCI), X_2 as Foreign Debt, X_3 as Trade Balance, X_4 as Inflation, X_5 as Interest Rate, β_1 to β_5 as Regression coefficient of each independent variable, ε_1 as Epsilon (other factors outside model 1).

The results of the calculations in Table 1 can be presented with the results of multiple linear regression as follows:

$$Y = 1{,}082296 + 0{,}118593\ X_1 - 0{,}402512\ X_2 + 0{,}298290 X_3 - 0{,}062694\ X_4 - 0{,}199365\ X_5$$

Table 1.
Multiple Linier Regression

Variable	Coefficient	Std. Error	t-Statistic	Sig
C	1.082296	0,512671	2,111092	0,0414
JCI	0,118593	0,052743	2,248506	0,0304
Foreign Debt	-0,402512	0,171197	-2,351161	0,0240
Balance of Trade	0,298290	0,054970	5,426445	0,0000
Inflation	-0,062694	0,027566	-2,274339	0,0287
Interest Rate	-0,199365	0,068820	-2,896918	0,0062
R-squared		0,852797		
adjusted-squared		**0,833428**		
F-statistic		44,02936		
(F-statistic)		**0,000000**		

Source: Results of data processing with Eviews 10

The interpretation is as follows that Constant Number = 1,082296 means that using statistical calculations if all the elastic ceterisparibus have consistent numbers the volatility of the rupiah exchange rate to the US dollar is equal to1,082296%. Regression Coefficient Number β_1= 0,118593, which means using statistical calculation of price indicators combination stock (JCI) (X_1) increased by 1 percent, assuming that the other elastic fields were consistent so that the volatility of the rupiah exchange rate against the US dollar would increase by 0,118593%. The calculation results are accepted on the multiple linear regression chart, statistically showing the significance of the Combination Stock Price Indicator (JCI) is smaller than (0,0304 ≤ 0,05), until it can be concluded that the elasticity of the Combination Stock Price Indicator (IHSG) has an important and positive effect to the Volatility of the Rupiah Exchange Rate to the US Dollar.

Regression Coefficient Number β_2 = -0,402512, meaning by calculating foreign loan statistics (X_2) increases by 1 percent, assuming other free elasticities are considered consistent so that the volatility of the rupiah conversion rate to the US dollar will decrease by 0,402512%. Results using statistics prove the results the significance of Foreign Loans is smaller than (0,0240 ≤ 0,05), so it can be concluded that the elasticity of Foreign Loans has an important and negative effect on the Volatility of the Rupiah Exchange Rate on the US Dollar.

Regression Coefficient Number β_3 = 0,298290, meaning using statistical calculation of the Trade Balance (X_3) increases by 1 percent, assuming other flexible elasticities are considered consistent so that the volatility of the rupiah exchange rate against the US dollar will increase by 0,298290%. The results statistically prove the results The significance of the Trade Balance is smaller than α = (0,000 ≤ 0,05), so it can be concluded that the elasticity of the Trade Balance has an important and positive effect on the Volatility of the Rupiah Exchange Rate to the US Dollar.

The Regression Coefficient β_4 = -0,062694, which means that by calculating the inflation statistic (X_4), it will increase by 1 percent, assuming other flexible elasticities are considered consistent so that the volatility of the rupiah exchange rate against the US dollar will decrease by 0,062694%. The results statistically prove that the significance of the Trade Balance is smaller than α = (0,000≤ 0,05), so it can be concluded that the Inflation elasticity has a significant and negative effect on the Volatility of the Rupiah Exchange Rate to the US Dollar.

Regression coefficient β_5 = -0,199365, meaning that using statistical calculation of interest rates (X_5) an increase of 1 percent, assuming other flexible elasticities are considered consistent so that the volatility of the rupiah exchange rate to the US dollar will decrease by 0,199365%. The results statistically prove the significance of the Interest Rate Amount less than α = (0,0062 ≤ 0,05), so it can be concluded that the elasticity of the Interest Rate has a significant and negative effect on the Volatility of the Rupiah Exchange Rate to the US Dollar.

$F_{statistical}$ experiments were used to identify the relationship between free elastics with a similar effect on finite elastics. The calculation results received in chart 1 are significant figures 0,0000 ≤ 0,05 which means significant influence, indicating that if the Elastic Combination of Stock Price Indicators, Foreign Loans, Trade Balance (Trade Balance) Inflation, and Interest Rates simultaneously have an important influence on the Volatility of the Rupiah Exchange Rate to the US Dollar.

The indicators of joint stock prices, foreign loans, trade balances, inflation, and interest rates simultaneously have an important influence on the volatility of the rupiah exchange rate to the US dollar shown by the results of the five free elastic regressions to the volatility of the rupiah exchange rate to the US dollar is Adjusted $R_{Squared}$ = 0,833428, meaning that the indicators of joint stock prices, foreign loans, trade balance, inflation, and interest rates simultaneously have an important influence on the Volatility of the Rupiah Exchange Rate to the US Dollar by 83,34%, the excess of 16,66% is influenced by factors other factors beyond the controlled form.

Discussion

The volatility of the Rupiah exchange rate to the US Dollar is strongly influenced by the elementary situation of the Indonesian economy. However, aspects of market affection and technical aspects (analysis based on historical attitudes in the form of charts) can also influence the volatility of the Rupiah exchange rate against the US Dollar. A country is said to be economically strong if it has good economic fundamentals which are reflected especially in low-interest rates, low inflation, stable exchange rates, a growing economy and low poverty rates, and high per capita income.

The weakening of the Rupiah exchange rate in 1998 and 2020 occurred mainly due to foreign investment coming out of Indonesia (capital outflow) as reflected in the Composite Stock Price Index (JCI) which fell by 51% in 1998, while in 2020 it fell by 30 % in line with the weakening of the Rupiah against the US Dollar. The decline in the exchange rate of the Rupiah against the US Dollar during the economic crisis in 1998 was strongly influenced by the policy of Bank

Indonesia at that time to set a very high reference interest rate (1 month Bank Indonesia Certificate) reaching 70%, pushing inflation to a very high level of 78% compared to the previous year. The results of this study are supported by research conducted by Purwono R. Mucha K. Mubin M. K. in 2018 (Purwono, Mucha, & Mubin, 2018).

Meanwhile, in 2020, Bank Indonesia's policy set the benchmark interest rate (BI Rate) which continued to decline in the 2nd quarter of 2020 to 4,25% to encourage the Indonesian economy to be better amid the Covid-19 pandemic, however, the Fed lowered its interest rate policy. Interest rates are close to zero interest rates, so the difference between the Rupiah Interest Rate (Interest Rate Differential) and the US Dollar Interest Rate is still wide. Another factor that weakened the exchange rate of the Rupiah against the US Dollar was Foreign Debt. In 1998 the ratio of External Debt to GDP was 58% (based on the law a maximum of 60% of GDP) and dominated by short-term debt (18 months), while in 2020 the ratio of External Debt to GDP was 33% and dominated by (89%) long-term debt.

Mrs. Sri Mulyani (Minister of Finance of the Republic of Indonesia) in her press release (CNN Indonesia, 2020) stated that the difference between the 1998 economic crisis and the 2020 economic crisis was that the 1998 economic crisis occurred due to financial problems in Asia, on the contrary, the 2020 economic emergency. intertwined because of the Corona Virus Endemic (Covid-19.) where the spread of the virus makes people's security vulnerable, as a result, economic activity falters causing general economic uncertainty. There are 193 countries affected by Covid-19 (News, 2021), and anticipate by implementing a social activity restriction policy or a lockdown policy in Indonesia, practicing the PSBB (Great Value Social Separation) policy will automatically cause a slowdown in development.

Based on the description above, it can be concluded that the volatility of the Rupiah exchange rate against the US Dollar is strongly influenced by economic fundamentals. The 1998 emergency was not only influenced by elementary economic aspects, but it was also influenced by speculative activities on the exchange rate of the Rupiah against the US Dollar which at that time was still weak in supervision from Bank Indonesia as the monetary authority and was also influenced by market sentiment because at that time Pak Suharto (President of the Republic of Indonesia) is sick, and politically unstable (many demonstrations from students) and negative sentiment from neighboring countries, namely Thailand, which experienced an economic crisis first, where at that time the Thai government declared its inability to pay its debts. The results of this study are supported by research conducted by Handoyo R. D. Sari A. D. P. in 2022 (Handoyo, Sari, Ibrahim, & Sarmidi, 2022).

E. CONCLUSION

Based on the results of statistical experiments obtained the following results:

1. The Composite Stock Price Index has a significant and positive effect on the Volatility of the Rupiah Exchange Rate against the US Dollar. The weakening of the Rupiah exchange rate in 1998 and 2020 occurred mainly due to foreign investment coming out of Indonesia (capital outflow) as reflected in the Composite Stock Price Index (JCI) which fell by 51% in 1998, while in 2020 it fell by 30% in line with the weakening of the Rupiah against the US Dollar
2. Foreign Debt has a significant and negative effect on the Volatility of the Rupiah Exchange Rate against the US Dollar. In 1998 the ratio of External Debt to GDP was 58% (based on the law a maximum of 60% of GDP) and dominated by short-term debt (18 months), while in 2020 the ratio of External Debt to GDP was 33% and dominated by (89%) long-term debt.
3. The Trade Balance has a significant and positive effect on the Volatility of the Rupiah Exchange Rate against the US Dollar. Aspects of market affection and technical aspects (analysis based on historical attitudes in the form of charts) can also influence the volatility of the Rupiah exchange rate against the US Dollar.
4. Inflation has a significant and negative effect on the Volatility of the Rupiah Exchange Rate against the US Dollar. A country is said to be economically strong if it has good economic fundamentals which are reflected especially in low inflation.
5. Interest Rates have a significant and negative effect on the Volatility of the Rupiah Exchange Rate against the US Dollar. In 2020, Bank Indonesia's policy set the benchmark interest rate (BI Rate) which continued to decline in the 2nd quarter of 2020 to 4,25% to encourage the Indonesian economy to be better amid the Covid-19 pandemic.

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