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Original Article

Analysis of the Effect of Remittance Receipts, Rupiah Exchange Rate and BI Interest Rate on the Amount of Foreign Exchange Reserves in Indonesia

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Abstract: *The development of the Indonesian economy today continues to show increasing integration with the world economy, such as international trade. One form of capital flow that enters the country is foreign exchange from international trade. Adequate foreign exchange reserves provide confidence to the market and investors that the country can meet its international payment obligations. However, Indonesia's foreign exchange reserves show a fluctuating trend caused by various external and internal factors, such as changes in global economic conditions, government monetary and fiscal policies, increased international trade activities, exchange rates between countries, and changes in central bank interest rates. This study aims to (1) analyze the simultaneous influence of remittances from Indonesian migrant workers, the rupiah exchange rate and Bank Indonesia interest rates on the amount of foreign exchange reserves in Indonesia and (2) partially analyze remittances from Indonesian migrant workers, the rupiah exchange rate and Bank Indonesia interest rates on the amount of foreign exchange reserves in Indonesia. This study uses a quantitative research design with an associative explanation. This study uses time series data for the period 1993-2022 with a total of 30 observations. The data collection technique uses non-participant observation techniques. This hypothesis testing uses multiple linear regression analysis. According to the study's findings, the amount of Indonesia's foreign exchange reserves is significantly and partially impacted by the rupiah exchange rate and the remittances made by Indonesian migrant workers, while the Bank Indonesia interest rate (BI Rate) has a significant and partially negative impact. Remittances from migrant workers, the value of the rupiah, and the interest rate of Bank Indonesia all have an impact on Indonesia's foreign exchange reserves from 1993 to 2022.*

Keywords: *Foreign Exchange Reserves, Exchange Rate, Migrant Worker Remittances, Interest Rates*.

I. INTRODUCTION

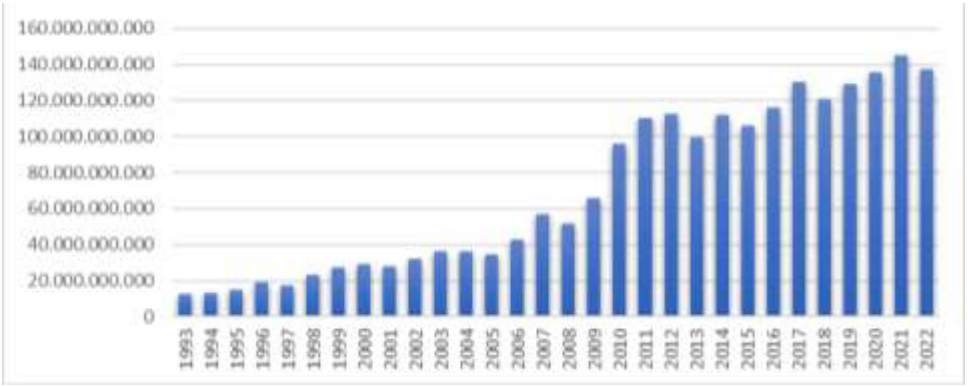
The Indonesian economy is still developing and becoming more integrated with the global economy. The adoption of an open economic system, whose operations are inextricably linked to the phenomenon of international relations, is the cause of this. The existence of this economic openness has an impact on the development of a country's balance of payments, which includes the flow of trade and international capital traffic. One form of capital flow that enters the country can be in the form of foreign exchange originating from international trade carried out by the country. Increasing a country's exports will bring benefits, namely increased income, increased foreign exchange, capital transfers and more job opportunities. Likewise, with import activities, a country can provide more alternative goods that can be consumed and the fulfillment of the need for raw materials and capital goods for industrial needs in these countries as well as the transfer of technology (Asmanto & Suryandari, 2008).

One crucial monetary indicator that reveals the strength or weakness of a nation's economic foundations and the extent to which it can engage in commerce worldwide is its foreign exchange reserves. With sufficient foreign exchange reserves, a country can import goods and services from abroad without being too dependent on fluctuating exchange rates. Adequate foreign exchange reserves also provide confidence to the market and investors that the country can meet its international payment obligations, such as foreign debt payments and imports of necessary goods. In addition, large foreign exchange reserves can also be an effective buffer in dealing with external economic pressures, such as the global financial crisis or sudden changes in the global market. Thus, foreign exchange reserves are one of the important factors in assessing the health of a country's economy and its ability to participate in international trade.

All foreign assets under the control of monetary authorities are considered foreign exchange reserves, also known as global reserves and foreign currency liquidity (IRFCL) or binding reserve resources. These reserves can be used at any time to finance imbalances in the balance of payments or to maintain financial stability by getting involved in the foreign exchange market, among other uses (Palembangan et al. 2020). Law Number 24 of 1999, concerning foreign exchange traffic and the

exchange rate system, states that all forms of foreign exchange transactions carried out by residents are the authority of Bank Indonesia as the country's central bank. According to the International Monetary Fund (IMF), a country's foreign exchange reserve position can be said to be safe if it can meet three months of import needs (Togatorop & Setiawina, 2017).

The following is the development of the foreign exchange reserve position in Indonesia from 1993-2022 (Central Bureau of Statistics, 2023). Based on Figure 1, data is presented regarding the foreign exchange reserve position in Indonesia for the period 1993-2022. The data shows an unstable trend with significant variations from year to year. In early 1993, Indonesia received a total of 12.4 billion USD in foreign exchange. This amount continued to show a stable increase until 1999 when the foreign exchange received by Indonesia reached 27.3 billion USD. Then, from 2000-2004, the amount of foreign exchange reserves tended to be in the range of 28-36 billion USD. Then, there was a significant increase in 2007 to 56.9 billion USD. In 2010, foreign exchange reserves reached 96.2 billion USD, which then increased again in 2011 to 110 billion USD. This increase is most likely due to external factors, such as high commodity prices and capital inflows in Indonesia.



Source: World Bank & BPS, 2023 (Processed Data)

Fig. 1 Position of Foreign Exchange Reserves in Indonesia for the Period 1993-2022 (USD Million)

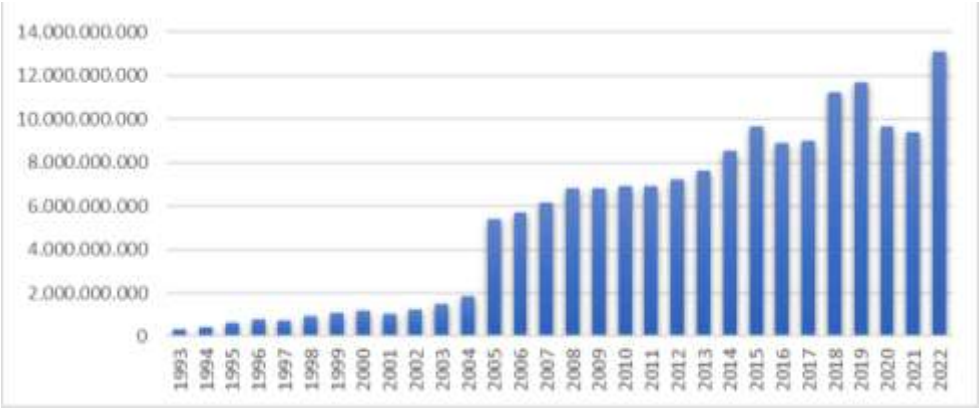
In 2017, foreign exchange reserves peaked at 130.2 billion USD. However, it experienced a significant decline in 2018 to 120.6 billion USD. In the following years, until 2022, the amount of foreign exchange reserves continued to increase rapidly, with the amount received being 137.2 billion USD. Despite fluctuations, foreign exchange reserves in Indonesia during that period (1993-2022) tended to increase significantly, reflecting the country's economic development in facing challenges and opportunities in the global market. Fluctuations in the position of the amount of foreign exchange reserves in Indonesia can be caused by various external and internal factors, such as changes in global economic conditions, government monetary and fiscal policies, increased international trade activities, exchange rates between countries, and changes in central bank interest rates.

International relations between one country and another are not only described through the exchange of goods and services but can also be in the form of the transfer of production factors, capital transfers, and the activities of multinational companies, which are also included in these relations. According to Todaro's theory (1979), a person's motivation to move is an economic motive. This motive occurs because of economic inequality between regions. According to Todaro, migration occurs due to the availability of unsuitable jobs in the area of origin and differences in income (wages) between the area of origin and the destination area (Mantra, 2003). Therefore, the condition of minimal job opportunities in Indonesia is one of the driving factors for the willingness of workers to migrate abroad by becoming Indonesian migrant workers abroad (Auliya, 2022). Indonesian Migrant Workers (PMI) are Indonesian citizens, both male and female, who carry out activities in the fields of economy, society, science, arts and professional sports and take part in work training abroad, either on land, sea or air for a certain period of time-based on a work agreement (Lestari & Budhi, 2022).

Based on data from the Indonesian Migrant Workers Protection Agency (BP2MI) of the Ministry of Manpower throughout January-May 2022, there were 46.56 thousand PMIs who received work placements abroad, with details of 22.47 thousand PMIs working in the formal sector and 24.09 thousand working in the informal sector. Of this number, Hong Kong is the main destination country for the placement of Indonesian PMIs abroad, reaching 19.75 thousand workers (42.41%). Followed by Taiwan, with the placement of PMIs reaching 12.95 thousand workers (27.81%), Singapore with 2.39 thousand workers (5.14%), and Japan with as many as 2.36 thousand workers (5.07%). Furthermore, the income received by these workers will be sent back to their families in their home countries. The money sent by workers abroad is called remittances.

Remittances sent by PMIs to their families in Indonesia have become an important source of income and contribution to the Indonesian economy as a whole. Remittances are money or goods sent by workers to their home areas while the workers

are still at their destination. Remittances can be sent through various channels, such as banks, money transfer agents, or digital platforms. Remittances are usually used to help families in the home country with daily needs, such as living expenses, education, housing, and health (Hidayahtulloh & Hidayat, 2023). Therefore, remittances can also be a significant source of income for recipient countries, as they can increase foreign exchange inflows and domestic consumption. Figure 2 presents data on the amount of remittances received by Indonesian migrant workers for the period 1993-2022.



Source: World Bank, 2023 (Processed Data)

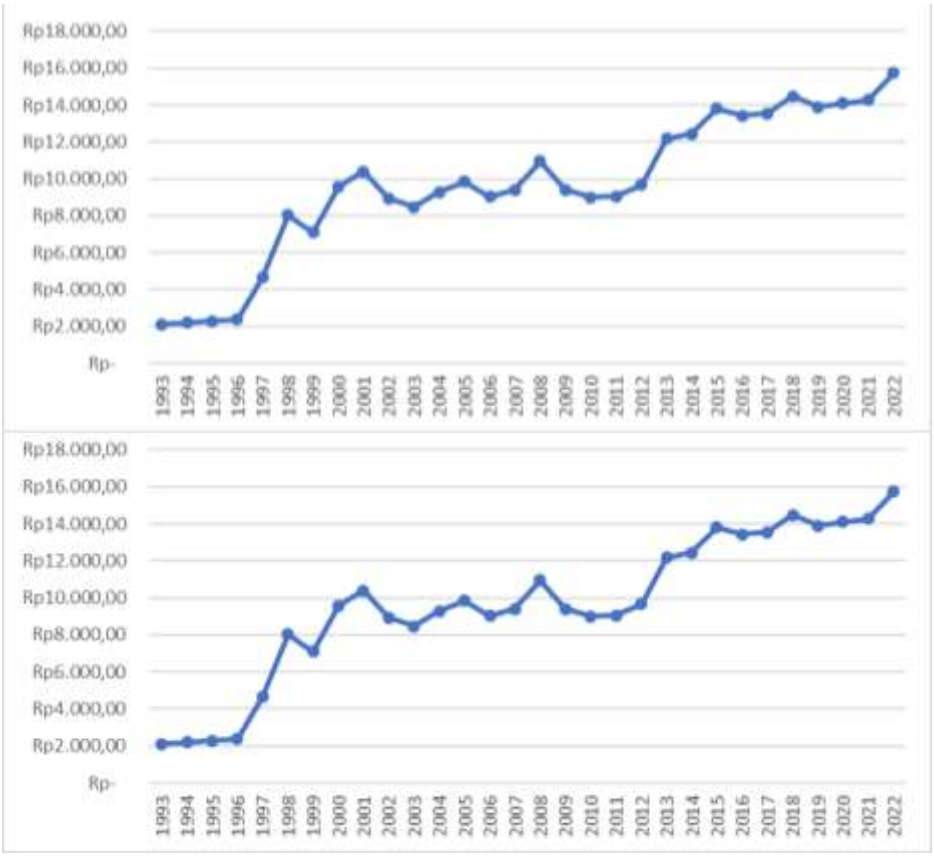
Fig. 2 Total PMI Remittance Receipts for the Period 1993-2022 (USD Million)

Figure 2 shows the number of remittances received by Indonesian migrant workers from 1993 to 2022, in million USD. In 1993, the amount of remittances received to Indonesia was recorded at 346 million USD. Remittances received continued to increase every year until in 2000, remittances received reached 1.1 billion USD, but there was a decrease in 2001 to 1.04 billion USD. After that, in 2002-2004, remittances continued to increase, where in 2004 it was at 1.86 billion USD. This was due to the increase in the number of Indonesian migrant workers abroad, resulting in an increase in the amount of money transfers sent to Indonesia. The peak in 2019 was recorded at 11.6 billion USD, this figure shows the highest figure of the total remittances received during 2000-2022. This was due to the increase in the number of migrant workers and a stable global economy, so labor wages also increased. However, in the following years, remittance receipts again experienced an extreme decline due to the COVID-19 pandemic, which caused the global economy to experience a crisis, the effects of which were felt throughout the country and all economic sectors in Indonesia. In 2020, remittance receipts were at 9.6 billion USD, then decreased slightly again in 2021 to 9.4 billion USD, until finally experiencing a rapid increase in 2022 to 13 billion USD. The decline in remittance receipts that year was followed by a decrease in the number of migrant workers abroad, a decrease in wages in several destination countries, and a decrease in the amount of foreign exchange reserves in Indonesia. The amount of remittances received has great potential to drive the economy. Based on data from the World Bank (2023) states that sending remittances by Indonesian migrant workers abroad is one of the largest contributors to foreign exchange, where in 2022, there were 13 billion USD of remittances received in Indonesia. In addition to remittances from Indonesian migrant workers, several other factors that can affect foreign exchange reserves are one of them, namely the rupiah exchange rate.

The exchange rate is a comparison of the value of a country's currency to another country's, for example, the exchange rate of USD with the rupiah. If the value of the rupiah decreases compared to the value of another country's currency (depreciation), it means that obtaining one unit of foreign currency will take more rupiah than before. Likewise, if the value of the rupiah increases (appreciation), then less rupiah will be needed to obtain another foreign currency. In an open economic system, the exchange rate plays an important role in international trade and international investment activities (Mankiw, 2007). Changes in the exchange rate will affect the economic situation in a country. Exchange rate instability affects the flow of capital or investment and international trade. When a country's exchange rate appreciates (foreign currency strengthens and local currency weakens), this will increase the value of exports and decrease the value of imports. When exports are higher than imports, it will create a surplus in the International Balance of Payments which will then increase the position of foreign exchange reserves (Islami & Rizki, 2018).

Changes in the rupiah exchange rate can also affect the structure of Indonesia's foreign exchange reserves. When the rupiah exchange rate strengthens (appreciates), more assets in foreign currencies can be purchased with the same amount of rupiah. Conversely, when the rupiah exchange rate weakens (depreciates), the number of assets in foreign currencies that can be purchased with the same amount of rupiah will be less. Therefore, changes in the rupiah exchange rate can affect the composition of foreign currencies in Indonesia's foreign exchange reserves by changing the proportion of assets in various foreign currencies. Related to the importance of the stability of exchange rate movements, in recent years, the rupiah exchange

rate has tended to weaken (depreciate). Figure 3 presents data on exchange rate movements from 1993-2022. In 1993, the rupiah exchange rate was at 2,110 rupiah per US dollar. However, over time, the exchange rate continued to decline until 2000, when the exchange rate was at 9,595 rupiah. In the period 2000-2012, the rupiah exchange rate tended to fluctuate but was stable in the range of 9,000-10,000 rupiah per US dollar.



Source: Central Bureau of Statistics and Ministry of Trade, 2023 (Processed Data)

Fig. 3 US Dollar Middle Exchange Rate Period 2000-2022 (Rupiah)

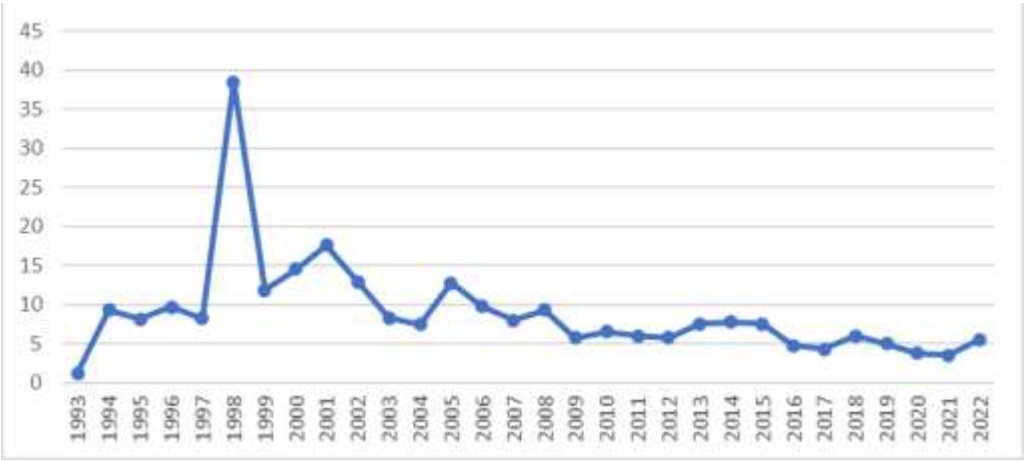
Then, in 2013, there was a sharp decline in the rupiah exchange rate to 12,189 rupiah per US dollar, which was likely influenced by factors such as the current account deficit, the weakening of the regional rupiah exchange rate, and global monetary policy. Although it had strengthened in 2014, the rupiah exchange rate weakened again in 2015 to reach 13,795 rupiah per US dollar. In the following years, the rupiah exchange rate tended to fluctuate but was still in a relatively stable range. In 2022, the rupiah exchange rate reached 15,731 rupiah per US dollar, which was likely influenced by various factors such as global economic conditions, government monetary and fiscal policies, and domestic conditions in Indonesia.

Changes in the rupiah exchange rate can also be influenced by external factors, such as global economic conditions and market sentiment, which also have an impact on the position of foreign exchange reserves in Indonesia. Thus, a weakening or strengthening rupiah exchange rate can affect the position of foreign exchange reserves in Indonesia, but these changes are not always linear and depend on various complex external and internal factors. Another factor that can affect the position of foreign exchange reserves in Indonesia is the Bank Indonesia Interest Rate (BI Rate).

BI interest rate, often referred to as BI Rate is a reference in determining interest rates that can reflect the position or stance of monetary policy set by Bank Indonesia and then announced to the public (Bank Indonesia, 2016). Indonesian commercial banks use this BI interest rate as their reference interest rate. According to Mankiw (2007), when interest increases, working capital decreases because of an increase in debt repayment costs, causing exporters to reduce loans, which leads to a decrease in exports.

When interest rates rise, more investment is made by the public, which will increase output and exports (Mankiw, 2007). In their study, Juliansyah et al. (2020) demonstrate that rising interest rates are the primary cause of financial market instability and that rising interest rates can also lead to a large influx of loans, in this case foreign capital entering the nation.

When foreign capital comes in the form of loans, it will either immediately increase foreign exchange reserves or have a positive effect; conversely, when loans decline, foreign exchange reserves may drop. Figure 4 presents data related to the position of Bank Indonesia's interest rate (BI Rate) from 1993 to 2022.



Source: *Bank Indonesia, 2023 (Processed Data)*

Fig. 4 Bank Indonesia Interest Rates for the Period 1993-2022 (%)

Based on the data in Graph 4 related to the position of the Bank Indonesia interest rate (BI Rate) in 1993-2022 in percent units shows fluctuations over the past 30 years. In 1993, the BI Rate was at 1.2 percent. Then it increased in 1994-1997 in the range of 8-9 percent. A drastic increase occurred in 1998, where the BI interest rate reached 38.4 percent, and this was the impact of the monetary crisis in Indonesia at that time.

Then, in 2000, the BI Rate was at 14.5 percent. In the early years of that period, the BI Rate tended to be high, reflecting Bank Indonesia's efforts to stabilize the rupiah exchange rate and control high inflation that year. In 2001, the BI Rate rose again to 17.62 percent in response to the global economic crisis and the domestic economic slowdown. However, in 2002, the BI Rate fell to 12.93 percent along with improving global and domestic economic conditions. In 2003, the BI Rate fell drastically to 8.31 percent as a stimulus measure to support the recovering national economic growth. During the following years, the BI Rate fluctuated, influenced by factors such as global economic conditions, inflation, domestic economic growth, and Bank Indonesia's monetary policy. In 2008, the BI Rate rose again to 9.25 percent in response to the global financial crisis that affected the Indonesian economy. However, in 2009-2012, the interest rate figures showed a significant decline from year to year, with the lowest figure being 5.75 percent. In 2013, the BI Rate rose again to 7.5 percent in response to high inflationary pressures. Because the inflationary tendency remained high until mid-2016, Bank Indonesia finally decided to accelerate monetary policy by reformulating. On August 19, 2016, BI reformulated to strengthen monetary policy to accelerate policy transmission with a shorter instrument tenor, namely the BI 7-Days (Reverse) Repo Rate. The BI Rate fell again in the following years, with the lowest figure in 2021 at 3.5 percent and rising again by 5.5 percent in 2022.

Based on the background that has been explained previously, it is urgently necessary to conduct research to further analyze the influence of the factors explained previously on the position of foreign exchange reserves in Indonesia; the proposed title is "Analysis of the Influence of Remittance Receipts, Rupiah Exchange Rate and Bank Indonesia Interest Rate (BI Rate) on the Amount of Foreign Exchange Reserves in Indonesia for the Period 1993-2022". This topic was chosen because foreign exchange reserves play a very important role in the Indonesian economy. Foreign exchange reserves are not only a buffer in facing potential economic crises but also an indicator of a country's economic health. Therefore, a deep understanding of the factors that influence foreign exchange reserves can help formulate appropriate economic policies to maintain the stability of the Indonesian economy. In addition, research on the factors that influence foreign exchange reserves in Indonesia is also important in the context of globalization and regional economic integration. As a country that adopts an open economic system towards international trade and foreign capital flows, Indonesia needs to understand the dynamics of the global and regional economy that can affect foreign exchange reserves. Thus, this study is expected to contribute to improving understanding of the factors that affect foreign exchange reserves in Indonesia and provide appropriate policy recommendations to maintain the country's economic stability.

II. RESEARCH METHOD

This study uses a quantitative research design with an associative explanation. The location of this research is in the territory of the Republic of Indonesia. The objects of research in this study are remittances of Indonesian migrant workers, the

rupiah exchange rate, the Bank Indonesia interest rate (BI Rate) and foreign exchange reserves. This study uses time series data with variables of remittances of Indonesian migrant workers (), the rupiah exchange rate (), the Bank Indonesia interest rate () and the amount of foreign exchange reserves (Y). Remittance receipts, the rupiah exchange rate, the Bank Indonesia interest rate and the amount of foreign exchange reserves are data in Indonesia during the period 1993-2022 with a total of 30 observations. This study employed quantitative data as its data type. This study's data came from secondary sources. The non-participant observation approach and documentation of the target phenomena or items are the data-gathering methods employed in this study. Multiple linear regression analysis is the method of analysis employed in this study.

III. RESULTS AND DISCUSSION

A summary of the data used in the study is provided using descriptive statistical analysis. The data presented in the descriptive analysis describes the study's sample as shown by the mean, median, standard deviation, maximum, and minimum values shown in Table 1. Based on Table 1, the N value or number of observations in the study is 30, with a time span of 1993-2022 (30 years).

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Remitansi	30	346000000	13089296495	5419509478.40	4035850225.943
Nilai Tukar	30	2110	15731	9656.97	3892.221
Suku Bunga	30	1.20	38.44	8.8947	6.57633
Devisa	30	12474062371	144907809744	69780626355.23	46551036495.701
Valid N (listwise)	30				

Table 1: Results of Descriptive Statistical Analysis

Based on Table 1, the results of the descriptive statistical analysis of all observations can be explained as follows. The remittance variable (X1) can be described as having a minimum value of 346,000,000 and a maximum value of 13,089,296,495, resulting in an average value of 5,419,509,478.40 with a standard deviation of 4,035,850,225.943. The exchange rate variable (X2) can be described as having a minimum value of 2,110 and a maximum value of 15,731, resulting in an average value of 9,656.97 with a standard deviation of 3,892.221. The interest rate variable (X3) can be described as having a minimum value of 1.20 and a maximum value of 38.44, resulting in an average value of 8.8947 with a standard deviation of 6.57633. The foreign exchange reserves variable (Y) can be described as having a minimum of 12,474,062,371 and a maximum value of 144,907,809,744 so that an average value of 69,780,626,355.23 is obtained with a standard deviation of 46,551,036,495.701.

A normality test is conducted to test whether, in the regression model, an independent variable and dependent variable or both are normally distributed or not normally. In this study using the Kolmogorov-Smirnov test with the provision that if the prob value of the residual value significance is > 0.05, then the data in the study is normally distributed, but if the significance value is <0.05, then the data in the study is not normally distributed.

Table 2: Normality Test Results

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		30
Normal Parameters[a,b]	Mean	-.0000097
	Std. Deviation	15915437081.72782500
Most Extreme Differences	Absolute	.105
	Positive	.076
	Negative	-.105
Test Statistic		.105
Asymp. Sig. (2-tailed)		.200[c,d]
a. Test distribution is Normal.		
b. Calculated from data.		
c. Lilliefors Significance Correction.		
d. This is a lower bound of the true significance.		

Based on the results of the Normality test in Table 2, the Asymp. Sig. (2-tailed) value is obtained, which has a significance level of 0.200 > 0.05 and a Kolmogorov-Smirnov statistical value of 0.105. This shows that the data in this study are normally distributed.

Multicollinearity testing is carried out with the aim of determining the correlation between independent variables in the regression model and whether there are symptoms of multicollinearity in the study or not. Multicollinearity testing in this study uses a test on the VIF and Tolerance values; if the VIF value is <10 and Tolerance> 0.1, then there are no symptoms of multicollinearity in the study.

Table 3: Multicollinearity Test Results

Coefficients[a]								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	11.005	.991		11.108	.000		
	LogX1	.484	.088	.689	5.500	.000	.194	5.166
	LogX2	.354	.160	.256	2.210	.036	.226	4.432
	X3	-.016	.009	-.127	-1.831	.079	.631	1.585
a. Dependent Variable: LogY								

Based on Table 3, the results show that in the regression model of this study, there is no multicollinearity between independent variables. This is evidenced by the VIF value of all independent variables <10 and the Tolerance value> 0.1; therefore, the regression model has passed the Multicollinearity test.

The Heteroscedasticity Test was conducted to find out whether there is an inequality in the variance of the residuals between observations so that a good regression model is homoscedasticity. The Heteroscedasticity Test in this study uses the Glejser test, in which, if the significance value of the independent variable ABS_RES> 0.05, then the research data does not show symptoms of heteroscedasticity.

Table 4: Heteroscedasticity Test Results

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1.515	.571		-2.652	.013
	LogX1	.163	.051	1.188	3.211	.054
	LogX2	-.223	.092	-.828	-2.417	.163
	X3	.013	.005	.543	2.652	.073
a. Dependent Variable: ABS_RES						

Based on the results of the heteroscedasticity test in Table 4, the significance values obtained for each variable were 0.054, 0.163, and 0.073, which are greater than 0.05. This indicates that there is no heteroscedasticity in the regression model of this study.

Autocorrelation test is conducted to determine whether there is a correlation between the disturbance error in period t and the disturbance error in period t-1 or earlier in the regression model. Autocorrelation testing in this study uses the Durbin-Watson test. The number of samples or n is known to be 30, with a total number of independent variables or k = 3 and a significance value of α = % (0.05), so the dL value is 1.2138 and dU = 1.6498. If the DW (Durbin Watson) value is between the upper bound (du) and (4 - du), then the autocorrelation coefficient is equal to zero, meaning there is no autocorrelation.

Table 5: Autocorrelation Test Results

Model Summary[b]					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.960[a]	.921	.912	.24091	1.816
a. Predictors: (Constant), X3, LogX2, LogX1					
b. Dependent Variable: LogY					

Based on the Durbin-Watson Distribution table in Table 5, with (k'; N) = (3;30), the dL value = 1.2138 and dU = 1.6498 are obtained, while the Durbin-Watson value (d) of the regression model is 1.816. This means that the Durbin Watson value (d) of the regression is between the upper bound (du) = 1.6498 and (4 - du) = 4-1.6498, namely 2.350 (dU < DW < 4-Du); this indicates that the data in this study has no autocorrelation.

This test was conducted to determine the independent variables in this study, namely PMI remittance receipts, the rupiah exchange rate and interest rates simultaneously significantly affecting the amount of foreign exchange reserves in 1993-

2022. If the significant probability value is <5% or <0.05, then the independent variables have a significant effect simultaneously on the dependent variable. The results of the F test in this study are as follows.

Table 6: Simultaneous Test Results (F Test)

ANOVA[a]						
Model		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
1	Regression	17.599	3	5.866	101.076	.000[b]
	Residual	1.509	26	.058		
	Total	19.108	29			
a. Dependent Variable: LogY						
b. Predictors: (Constant), X3, LogX2, LogX1						

Based on the results of the F test analysis in Table 6, the F Calculation value is 101.076 with a significance of 0.000. This shows that PMI remittance receipts, the rupiah exchange rate and interest rates simultaneously have a significant effect on the amount of foreign exchange reserves in Indonesia from 1993 to 2022.

The determination coefficient in this study aims to test and measure the extent to which the research model is able to explain the variation of the dependent variable. The value of the determination coefficient is in the range between 0-1. The adjusted value approaching 1 means that the value of the independent variable can largely explain the dependent variable in this study.

Table 7: Determination Coefficient

Model Summary				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	.960[a]	.921	.912	.24091
a. Predictors: (Constant), X3, LogX2, LogX1				

The coefficient of determination value in Table 7 shows a value of 0.921. This means that variations influence 92.1 percent of the variation in foreign exchange reserves in PMI remittance receipts, the rupiah exchange rate and interest rates, while 7.9 percent is influenced by other factors outside the research model.

This test was conducted to determine the independent variables in this study, namely PMI remittance receipts, the rupiah exchange rate and interest rates, which partially have a significant effect on the amount of foreign exchange reserves in Indonesia in 1993-2022. The results of the partial test (t-test) are as follows.

Table 8: Partial Test Results (t-Test)

Coefficients[a]						
		Unstandardized Coefficients		**Standardized Coefficients**		
Model		**B**	**Std. Error**	**Beta**	**t**	**Sig.**
1	(Constant)	11.005	.991		11.108	.000
	LogX1	.484	.088	.689	5.500	.000
	LogX2	.354	.160	.256	2.210	.036
	X3	-.016	.009	-.127	-1.831	.048
a. Dependent Variable: LogY						

Based on the partial test results (t-test) in Table 8, the linear regression equation formed follows.

$$\ln \hat{Y} = \alpha + \ln \beta_1 X_1 + \ln \beta_2 X_2 + \ln \beta_3 X_3 + \mu$$

$$\ln \hat{Y} = 11{,}005 + 0{,}484\, X_1 + 0{,}354\, X_2 - 0{,}016\, X_3$$

Descriptions:

$\ln \hat{Y}$	: Foreign exchange reserves (USD)
α	: Constants
X_1	: Indonesian Migrant Workers Remittances (USD)
X_2	: Exchange rate (Rupiah)
X_3	: Interest rate (Percentage)
$\ln \beta_1 - \beta_3$	: Regression coefficient
μ	: Standard Error

According to the findings of this study's analysis, the quantity of foreign exchange reserves (Y) over the years 1993–2022 is positively and significantly impacted by the remittances received from Indonesian migrant workers (X1). This supports the study's hypothesis that the amount of foreign exchange reserves is positively and significantly impacted by the remittances received from Indonesian migrant workers. Indonesia's foreign exchange reserves will rise in tandem with the amount of remittances received from its migrant workers. Remittances are foreign exchange transfers from workers working abroad to their home country. The flow of remittances will be recorded in the current accounts in the balance of payments, together with the trade balance and payments or interest income related to a country's international investment position. Research by Mahendra et al. (2022) also shows that remittances have a positive and significant impact on increasing the country's foreign exchange reserves. In general, remittances or money transfers by migrant workers are a vital source of foreign exchange and income for countries with developing economies. This happens when migrant workers send their income in the form of foreign currency to their home country by exchanging their money, which will have an impact on increasing a country's foreign exchange. In addition, not all of the money sent is used. However, some of the money sent can be saved in a bank, or some is deducted in paying taxes, thereby increasing a country's foreign exchange, ultimately increasing foreign exchange reserves. The study's findings are consistent with Putri's (2021) research, which found that the remittance variable significantly and favorably affects foreign exchange reserves. According to research by Yulinda (2020), remittances significantly and favorably impact foreign exchange reserves.

The results of the analysis show that the rupiah exchange rate (X2) does not have a negative effect on the amount of foreign exchange reserves (Y) for the period 1993-2022. The results of this study do not match the research hypothesis, which states that the rupiah exchange rate has a negative effect on the amount of Indonesia's foreign exchange reserves for the period 1993-2022. The results of this study indicate that the rupiah exchange rate (X2) does not have a negative effect on the amount of foreign exchange reserves (Y) for the period 1993-2022, which means that if the rupiah exchange rate increases, Indonesia's foreign exchange reserves will also increase. This is because the higher the exchange rate, the more it will encourage investors to invest in the domestic market, thus causing a surplus in the current account balance and increasing the value of the country's foreign exchange reserves. The results of this study are in accordance with the theory that if a country's foreign exchange reserves are running low, it can also be ascertained that the country's currency is depreciating because the country will find it difficult to intervene in exchange rate changes, while if the country's foreign exchange reserves increase, the country's currency will strengthen because it will be difficult to be depressed by negative sentiment. It can be explained that if a country's foreign exchange reserves continue to dwindle and become thinner, there will be a rush or attack of desire to buy foreign currency, which causes the price of foreign currency to increase and, ultimately, the exchange rate to increase (depreciate).

Meanwhile, Indonesia's foreign exchange reserves are relatively large and can make sufficient foreign exchange purchases if needed to stabilize the exchange rate. The exchange rate is a comparison of the value of a country's currency to that of other countries, for example, the exchange rate of the USD currency with the rupiah. Changes in the rupiah exchange rate will affect the structure of Indonesia's foreign exchange reserves. This study's results align with research by Amalia et al. (2021) that the rupiah exchange rate had a significant positive effect in the long term on Indonesia's foreign exchange reserves from 1986-2018. The higher the exchange rate, the higher Indonesia's foreign exchange reserves will be. This is because if the rupiah appreciates, less rupiah will be needed to obtain other foreign currencies. This causes foreign currency to be obtained with a small rupiah currency value so that foreign exchange reserves will increase. Another study conducted by Safitri et al. (2023) also showed that the exchange rate variable partially has a positive and significant effect on foreign exchange reserves. This is different from the results of research conducted by Saleha et al. (2021), which stated that the exchange rate variable partially has a negative effect on foreign exchange reserves. Masitha and Pangidoan (2020) also found that the Rupiah Exchange Rate negatively and significantly affects Foreign Exchange Reserves.

Based on the results of the study, it show that Bank Indonesia's interest rate (X3) has a negative and significant effect on foreign exchange reserves (Y) for the period 1993-2022. This supports the study's hypothesis that for 1993 to 2022, Bank Indonesia's interest rate has a negative and substantial impact on foreign exchange reserves. If Bank Indonesia's interest rate increases, foreign exchange reserves will decrease. The increasing exchange rate in question is the appreciation of the dollar exchange rate, which causes the rupiah to depreciate. The effect of the exchange rate on foreign exchange reserves is very important. The exchange rate is the price of a country's currency measured in foreign currency when conducting international trade transactions. The exchange rate is important because it describes a country's ability to conduct international transactions. The increasing exchange rate is the dollar exchange rate appreciating, which causes the rupiah to depreciate, decreasing foreign exchange reserves. This study is in line with the research of Khusnatun & Hutajulu (2021) which shows that the BI rate variable in the long term and short term has a negative and significant impact on foreign exchange reserves in 2016-2020. The research of Masitha and Pangidoan (2020) also found that interest rates have a negative and significant effect on Foreign

Exchange Reserves. According to research by Palembangan et al. (2020), the BI benchmark interest rate significantly affects foreign exchange reserves in Indonesia in both the short and long term.

IV. CONCLUSION

According to the study's findings, remittances from Indonesian migrant workers significantly and partially increased the country's foreign exchange reserves between 1993 and 2022. For the years 1993–2022, Indonesia's foreign exchange reserves are significantly and partially impacted favorably by the rupiah exchange rate. The quantity of Indonesia's foreign exchange reserves for the years 1993–2022 is significantly and partially impacted negatively by the Bank Indonesia interest rate (BI Rate). Remittances from migrant workers, the value of the rupiah, and the interest rate of Bank Indonesia all have an impact on Indonesia's foreign exchange reserves from 1993 to 2022.

Efforts to encourage increased growth in remittance inflows that have been carried out by the government should be made an inseparable part of the national foreign exchange increase policy. The government needs to integrate the increasing remittances and national foreign exchange policy with the exchange rate policy so that the Rupiah exchange rate remains competitive. Suppose the amount of a country's foreign exchange reserves increases. In that case, foreign confidence in our country's ability to overcome external shocks will also increase so that it can suppress speculation on the domestic currency, which will ultimately make the domestic exchange rate appreciate. The government is expected to continue to maintain the stability of the rupiah exchange rate against foreign currencies, especially the US dollar, so that our country can continue to compete with neighboring countries in international activities. The BI rate policy can continue to be maintained. BI must also be able to control the value of foreign currencies so that they are relatively stable. The more stable the foreign currency, the fewer variables that affect interest rates.

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