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The Effect of Exchange Rate of the Rupiah, Money Supply, Inflation, and BI Rate on Sharia Bank Financing During the Covid-19 Pandemic

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Abstract
The Covid-19 pandemic is an event of the spread of the 2019 Coronavirus disease. The pandemic has had a significant impact on the development of the world economy, especially the Islamic Banking Industry. The research used is quantitative research with an associative approach using multiple linear regression. The population used by Islamic banks and the samples used in this study are saturated and non-probability samples. This study aims to analyze the factors that influence the financing of Islamic commercial banks. Based on the results of the regression test, it proves that the rupiah exchange rate and inflation have no effect on sharia commercial bank financing, while the BI rate and money supply have an effect on sharia commercial bank financing.

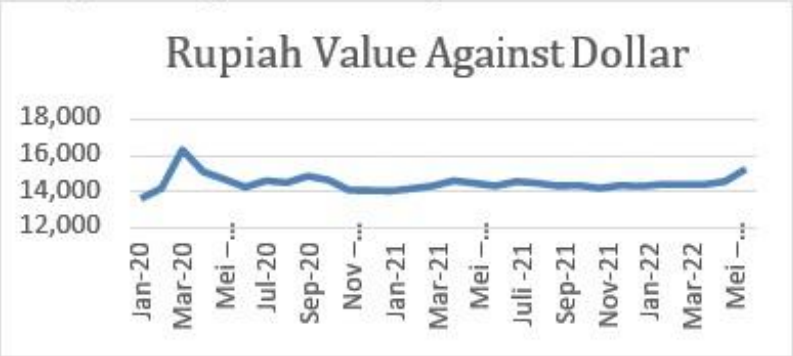
***Keywords*:** *rupiah exchange rate, money supply, inflation and bi rate, financing islamic commercial banks.*

A. Introduction

Indonesia is one of the countries affected by the spread of the Corona virus Disease 2019 or commonly known as Covid-19. It all began with the first confirmed case that emerged in early March 2020. The spread of Covid-19 has had an impact on the Indonesian economy, specifically leading to a deficit in the current account and capital transactions, as well as a weakening of the Indonesian rupiah against the US dollar.

The depreciation of the Indonesian rupiah and the increase in the value of the US dollar are impacted because the US Dollar serves as the world's reference currency for transactions due to its widespread usage across many countries. The dollar is utilized as an international currency owing to its relatively stable movement, despite the fact that the United States is not the country with the largest Gross Domestic Product (GDP) (Rumondor et al., 2021). Here is the graph showing the exchange rate of the rupiah against the dollar:

Graph 1. Rupiah Value Against the Dollar. 2020 -2022

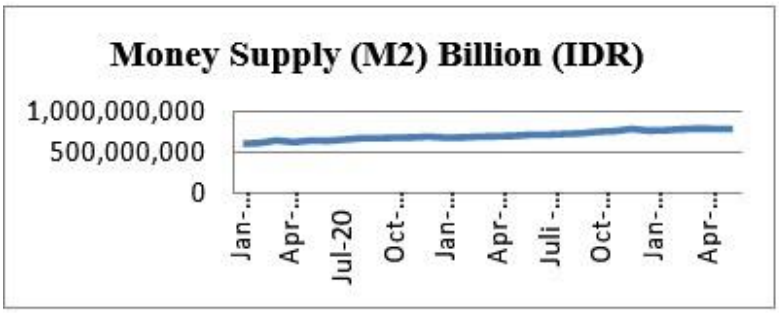


Source: Bank Indonesia (2022) processed.

Based on the graph above, the increase in the exchange rate of the rupiah during the Covid-19 pandemic is influenced by both global and domestic factors. The depreciation of the rupiah has significant implications for a country's economy. When the economy declines, and people have to meet their needs, they often turn to bank financing, which in turn affects the distribution of financing in Islamic banks (Adwin Surja Atmadja, 2002). The Covid-19 pandemic has had an impact on the economy, economic stability, and economic growth of a country. The extent to which money plays a role in the economy, as perceived by the public and monetary authorities, determines the country's economic growth. When discussing money, it is essential for the economy that the Amount of Money in Circulation (Jumlah Uang Beredar - JUB) in the hands of the public increases normally to have a positive impact.

Based on the data shown in the graph, it indicates an increase in the money supply during the Covid-19 pandemic. The rise in the money supply will lead to an increase in third-party funds collected, which will be channeled into financing, resulting in a growth in financing activities. However, if the increased third-party funds are not immediately channeled into financing, Shariah banks may incur losses due to their obligation to provide returns (nisbah) on the collected third- party funds (DPK) (Amaliyah & Aryanto, 2022). During the Covid-19 pandemic, there were

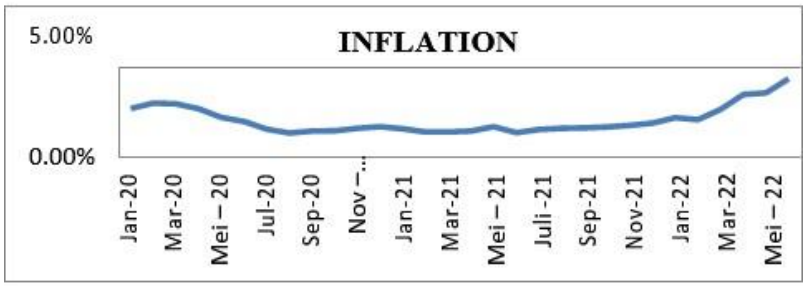
Graph 2. Money Supply. (M2) 2020 -2022



Source: Badan Pusat Statistik (BPS), Processed (2022).

concerns about the possibility of a recession due to an increase in inflation, leading to a reduction in real income for the public. The increase in inflation reduces the real value of money, causing a decline in real income earned. Here is the graph showing inflation during the pandemic.

Graph 3. Increase in Inflation Rate 2020-2022.

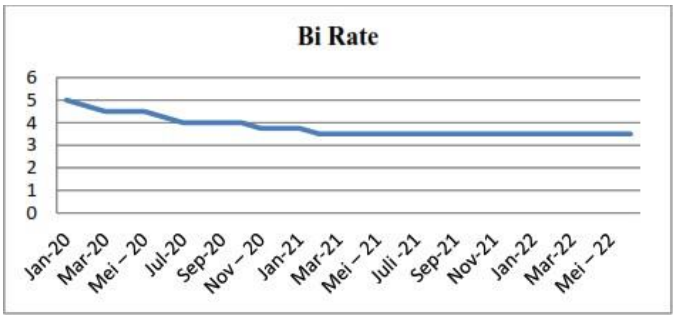


Source: Bank Indonesia (bi.go.id, 2022), Processed.

During the pandemic, as shown in the graph, there was an increase in inflation, which resulted in a reduction in people's income. This, in turn, affected the ability of customers to save or deposit money in banks since their income was primarily used to meet essential needs. As a

consequence, the funds collected by the banking sector decreased, impacting the distribution of financing by the banks. To mitigate these effects, it is essential to monitor and control inflation so that it does not continue to rise and adversely affect the Indonesian economy. During the pandemic, Bank Indonesia (BI) was also affected, as indicated in the graph showing the BI rate.

Graph 4. BI Rate January 2020- June 2022



Source: Badan Pusat Statistik (BPS), Processed (2022).

Based on the BI rate graph, during the Covid-19 pandemic, Bank Indonesia decided to maintain a policy of lowering the BI rate or equivalent rate. During the Covid-19 pandemic, the demand for financing from the public decreased, so the BI rate had to be reduced as seen in the decreasing trend in the BI rate graph. This move aimed to encourage people to borrow and utilize banking services. It was an effort by Bank Indonesia to support the national economic recovery (April et al., 2017). The Indonesian economy was impacted by the Covid-19 pandemic, and one of the affected sectors was the Islamic banking sector, as shown in the graph of Islamic banking financing.

Graph 5. Financing of Islamic Commercial Banks.

Source: OJK, Shariah Banking Statistic, Processed. (2022)

The graph above shows an increase in all types of financing due to the policy of lowering the BI rate. In the current pandemic situation, banks have implemented various banking policies to cope with Covid-19, affecting financing distribution, asset quality

reduction, and tightening of net interest margins. Therefore, factors influencing financing are crucial for taking action when the Indonesian economy experiences a downturn that impacts the Islamic banking sector (Hernawati & Puspasari, 2018). Surviving the risks posed by the Covid-19 pandemic, especially the factors that enhance the mobilization of capital in Islamic banks, is essential. Many recent studies have been conducted under normal conditions (without the Covid-19 pandemic), but when conducted during the pandemic, it is necessary to explore whether the results remain consistent or present new findings. Based on this rationale, this research is needed to study how exchange rates, inflation, money supply (JUB), and BI Rate interact during the pandemic

To put it another way, please try to answer at least these two questions: (1) why do you believe that your research question is such an important issue to be answered; and (2) how do other scholars have or have not answered those research question, or how do you think your answer would be a contribution to the existing scholarship on the subject.

A detailed description of your methods in conducting the research is not necessary to write down in this section, but if you think you have to do so, you may mention it slightly in one or two sentences. A little bit of exploration on the flows of your discussion and the expected final results will be good points for closing this introduction section.

B. Research Methods

The research is about "The Effect of Rupiah Exchange Rate, Inflation, Money Supply (M2), and BI Rate on Islamic Bank Financing during the Pandemic." The research method used is quantitative research with an associative approach. Associative research aims to determine the relationship between two or more variables, and its purpose is to test hypotheses and make general decisions. This research employs secondary data accessed through the internet and literature review. The population under study includes the rupiah exchange rate, inflation, BI rate, and the amount of money in circulation concerning inflation during the Covid-19 pandemic.

1. **Population and Sample.**

The population is a generalization area consisting of objects/subjects with specific quantities and characteristics determined by the researcher for study and subsequent conclusion drawing (Sugiyono, 2014). The population of this research is all Islamic commercial banks in Indonesia, totalling 13 banks, including Bank Aceh Syariah, Bank BPD Riau Kepri Syariah, BPD Nusa Tenggara Barat Syariah, Bank Muamalat Indonesia, Bank Victoria Syariah, Bank Jabar Banten Syariah, Bank Syariah Indonesia, Bank Mega Syariah, Bank Panin Dubai Syariah, Bank Syariah Bukopin, BCA Syariah, Bank Tabungan Pensiunan Nasional Syariah, and Bank Aladin Syariah. The sampling technique used in this study is a saturated sample and non-probability sampling.

2. **Data and Data Sources.**

The type of data used in this research is quantitative. The research process was conducted after obtaining all the necessary data, which includes statistical data on inflation, exchange rates, money supply, BI rate, and Islamic bank financing during the period from January 2020 to June 2022. Each dataset consists of 150 data points, taken on a monthly basis, and is in the form of time series data. The data sources for inflation and exchange rate data are from the Bank Indonesia website (bi.go.id, 2022). The data on money supply and BI rate are obtained from the Central Bureau of Statistics, while the data on Islamic bank financing are sourced from the statistical data of Islamic banks provided by the Financial Services Authority.

3. **Data Analysis Method.**

This research employs quantitative data analysis, where the data used consists of numerical values. The method of analysis used in this study is time series analysis, utilizing software such as Eviews 12 and Microsoft Excel 2010 as tools for regression and data analysis. Additionally, data adjustment or simplification is performed by transforming the data into natural logarithm form (Ln).The methods used in this research include.

4. Classical Assumption Test.

The classical assumption test is conducted to determine whether the regression model used truly demonstrates a significant and representative relationship. The classical assumption tests performed in this research include tests for normality, heteroscedasticity, multicollinearity, and autocorrelation.

5. Hypothesis Testing.

Hypothesis testing is conducted to examine the proposed hypotheses in order to determine the influence of independent variables on the dependent variable. To perform this analysis, regression analysis is used, including the t-test (partial) and F-test (simultaneous), as well as the analysis of the coefficient of determination (R2).

6. Multiple Linear Regression Analysis.

Multiple regression analysis is a statistical tool used to examine the values and effects of two or more independent variables on a dependent variable with the aim of proving the existence or absence of a causal relationship or functional relationship between the independent variables.

7. Analysis Results.

Descriptive statistical tests were conducted to provide an overview of the object under study.

The results of the descriptive statistical tests in this research are explained in the following table:

Descriptive Statistics.

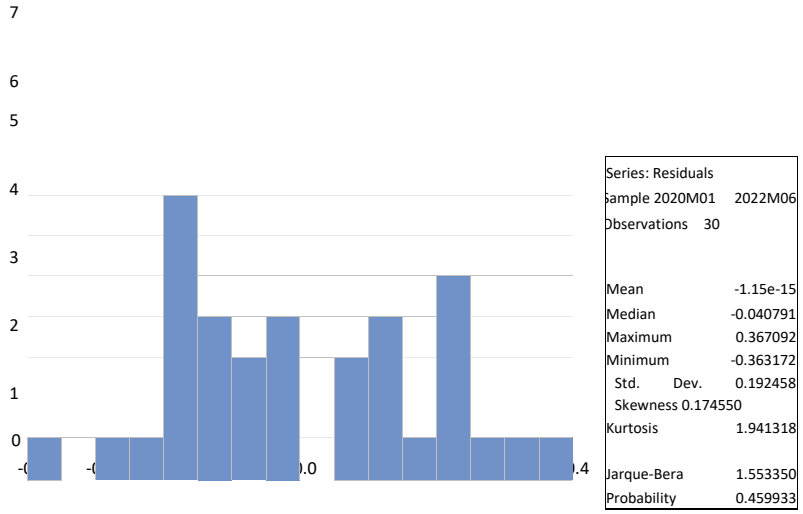
Table 1. Descriptive Statistics

	Y	X1	X2	X3	X4
Mean	12.19468	9.583410	20.36936	0.657890	1.331083
Median	12.34075	9.577300	20.35680	0.518700	1.252700
Maximum	12.55020	9.703100	20.48910	1.470100	1.609400
Minimum	11.83110	9.522300	20.22010	0.277600	1.252700
Std. Dev.	0.273114	0.031438	0.079748	0.333174	0.109714

Source: E-views 12 (Data processed

The distribution of Islamic commercial bank financing, rupiah exchange rate, money supply, inflation, and BI rate is good. The data is homogenous, meaning there is no significant gap between the lowest and highest values of the variables during the research period.

C. Result and Discussion



The normality test is the initial step of the classical assumption test and one of the crucial processes that significantly influence the regression model. Based on the results of the normality test, the Jarque-Bera probability value is 0.459933. This value is greater than 0.05. Therefore, it can be concluded that overall data in this research is normally distributed.

Results of Heteroskedasticity Test.

Table 2. Heteroskedasticity Test

Heteroskedasticity Test: Breusch-Pagan-Godfrey Null hypothesis: Homoskedasticity
F-statistic 2.361815 Prob. F(5,24) 0.0706 Obs*R-squared 9.893364 Prob. Chi-Square(5) 0.0783 Scaled explained SS 3.233610 Prob. Chi-Square(5) 0.6640

Source: output Eviews 12, data processed

Based on the results of the heteroscedasticity test, the probability value of Obs*R-square based on the Breusch Pagan Godfrey test is 0.0783, which is greater than 0.05. Therefore, it can be concluded that there is no heteroscedasticity phenomenon in this research.

Table 3. Results of Multicollinearity Test.

	X1	X2	X3	X4
X1	1.000000	-0.023979	0.308208	0.141324
X2	-0.023979	1.000000	0.171230	-0.849441
X3	0.308208	0.171230	1.000000	0.258201
X4	0.141324	-0.849441	0.258201	1.00000

Source: Data processed by *Eviews* 12

Based on the results of the multicollinearity test in Table 4.3, it can be observed that all the coefficients of correlation between independent variables are less than 0.80. Therefore, it can be concluded that the model is free from multicollinearity issues.

Results of Autocorrelation Test

Table 4. Durbin Watson Autocorrelation Test

R-squared	0.503426	Mean dependent var	12.19468
Adjusted R-squared	0.423974	S.D. dependent var	0.273114
S.E. of regression	0.207283	Akaike info criterion	-0.158447
Sum squared resid	1.074161	Schwarz criterion	0.075085
Log likelihood	7.376712	Hannan-Quinn criter.	-0.083738
F-statistic	6.336242	Durbin-Watson stat	0.701644
Prob(F-statistic)	0.001155		

Source: Data *Eviews* 12 (processed).

Based on the table, the Durbin Watson statistic obtained is 0.701644, which falls between 2 and -2. Therefore, it can be concluded that there is no autocorrelation problem in the model.

The results of the hypothesis.

Table 5. Regression Hypothesis Test

Dependent Variable: Y

Method: Least Squares

Date: 03/17/23 Time: 06:22

Sample: 2020M01 2022M06

Included observations: 3

Variable	Coefficien	Std. Error	t-Statistic	Prob. t
C	-52.71171	33.29573	-1.583137	0.1260
X1	0.376934	1.291887	0.291771	0.7729
X2	2.836087	1.425319	1.989791	0.0577
X3	0.151803	0.191039	0.794620	0.4343
X4	2.573034	1.055387	2.438000	0.0222
R-squared	0.503426	Mean dependent var		12.19468
Adjusted R-squared	0.423974	S.D. dependent var		0.273114
S.E. of regression	0.207283	Akaike info criterion		-0.158447
Sum squared resid	1.074161	Schwarz criterion		0.075085
Log likelihood	7.376712	Hannan-Quinn criter.		-0.083738
F-statistic	6.336242	Durbin-Watson stat		0.701644
Prob(F-statistic)	0.001155			

Source: *Eviews* 12, processed.

Hypothesis testing is conducted to determine the influence of variables that are related or have an impact on Islamic commercial bank financing.

Partial Test Results (t-test)

The t-test (Partial test) is used to examine the individual influence of each independent variable (X) on the dependent variable (Y). The exchange rate of the rupiah

against Islamic commercial bank financing, based on statistical calculations, has a significance level of 0.05 (5%). The probability value of 0.7729 is less than 0.05, so it can be concluded that Ho1 is accepted, and the exchange rate of the rupiah does not have a partial effect on Islamic commercial bank financing.

The money supply against Islamic commercial bank financing, based on statistical calculations, has a significance level of 0.0577. The expected significance level is 0.05 (5%), and the probability value of 0.05 is less than 0.057. Therefore, it can be said that the money supply has a partial effect on Islamic commercial bank financing.

Inflation against Islamic commercial bank financing, based on statistical calculations, has a t- value of 0.794620 with a significance level of 0.4343. The expected significance level is 0.05 (5%), and the probability value of 0.4343 is less than 0.05. Therefore, it can be concluded that Ho2 is accepted, and inflation does not have a partial effect on Islamic commercial bank financing.

The BI rate against Islamic commercial bank financing, based on statistical calculations, has a t-value of 2.438000 with a significance level of 0.0222. The expected significance level is 0.05 (5%), and the probability value of 0.0222 is less than 0.05. Therefore, it can be said that BI rate has a partial effect on Islamic commercial bank financing, and Ho2 is rejected.

Results of the Simultaneous Test (F-test)

The Simultaneous Test or F-test is a statistical test that aims to determine whether independent variables collectively affect the dependent variable or not. Based on the Simultaneous Test or F-test in table 4.5 using Eviews 12, the significance value is 0.001155. The expected significance level is 0.05 (5%), which means the probability value of 0.001155 is less than 0.05. Therefore, it can be concluded that the exchange rate of the rupiah, money supply, inflation, and BI rate collectively (together) have a significant effect on Islamic commercial bank financing.

Results of the Coefficient of Determination (R-squared) Test

The coefficient of determination is used to show the extent of the relationship between the dependent variable (Y) and the independent variables (X). The result of the

coefficient of determination (R2) is 0.423974, which means the contribution of all independent variables, namely the exchange rate of the rupiah, money supply, inflation, and BI rate, affects the dependent variable by 42%. The remaining 58% is influenced by other variables. Other variables may affect Islamic commercial bank financing.

Results of Multiple Linear Regression

Financing of Islamic Commercial Banks = -52.71 (Islamic Commercial Banks Financing) + 0.37 (Exchange Rate) + 2.83 (Money Supply) + 0.15 (Inflation) + 2.57 (BI Rate)

The constant is -52.71171, which means that if the exchange rate of the rupiah (x1), money supply (x2), inflation (x3), and BI rate (x4) are constant, the Islamic commercial bank financing will have a level of 6.624.

The regression coefficient for the exchange rate of the rupiah is 0.3769, which means that every 5 percent increase in the exchange rate of the rupiah will increase the financing by 0.3769, assuming other independent variables are constant.

The coefficient for the money supply is 2.8360, indicating that every 5 percent increase in the money supply will increase the financing by 2.8360, assuming other independent variables are constant.

The regression coefficient for inflation is 0.1518, which means that every 5 percent increase in inflation will increase the financing by 0.1518, assuming other independent variables are constant.

The regression coefficient for BI Rate is 2.5730, which means that every 5 percent increase in BI Rate will increase the financing by 2.753, assuming other variables are constant

D. Conclusion

Based on the analysis and discussion of the research on the influence of the exchange rate of the rupiah, money supply, inflation, and BI rate that has been conducted, the following conclusions can be drawn: the exchange rate of the rupiah and inflation do not

have any influence on Islamic commercial bank financing. However, the money supply and BI rate have an influence on Islamic commercial bank financing.

The results from the simultaneous analysis (F-test) show that the exchange rate of the rupiah, money supply, inflation, and BI rate positively affect Islamic commercial bank financing, with a significance value of 0.00115. However, these four variables have a relatively small impact on Islamic commercial bank financing due to their low significance values.

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