

## The Effect of Macroeconomics Variables on Islamic Bank Stability During COVID-19 Pandemic: Evidence From Indonesia

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### Abstract

Research that traces the impact of COVID-19 on Islamic banking has been carried out by many previous researchers in the last two years. However, no researcher has discussed specifically related to Islamic banking stability related to macroeconomic relaxation during the COVID-19 pandemic. The purpose of this study is to trace the influence of macroeconomics on the stability of Islamic banking during COVID-19 in anticipation of similar shocks. This study uses multiple linear regression tests to see macroeconomic factors consisting of GDP, Inflation, BI Rate, Exchange Rate, and JUB as independent variables and CAR, NOM, and NPF as control variables on z-score as dependent variables. The results of the study showed that the GDP variable had a significant negative influence while the BI Rate and Exchange Rate variables had a significant positive effect on the stability of Islamic banking during the COVID-19 pandemic. As well as inflation variables and JUB showed insignificant results. The stable condition of Islamic banking is indicated by the intermediation function in Islamic banking that runs smoothly and can survive various kinds of shocks. This proves that during the COVID-19 pandemic the Government has succeeded in taking several policies that have proven effective in taking policies in running the economy which have an impact on the resilience of Islamic banking stability.

**Keywords:** Islamic Bank; Z-Score; Bank Stability; COVID-19 Pandemic

### Abstrak

Riset yang menelusuri dampak COVID-19 terhadap perbankan syariah telah banyak dilakukan oleh peneliti sebelumnya dalam dua tahun terakhir. Namun belum ada yang membahas secara khusus stabilitas perbankan syariah terkait relaksasi ekonomi makro di masa pandemi COVID-19. Tujuan penelitian ini adalah untuk menelusuri pengaruh makroekonomi terhadap stabilitas perbankan syariah di masa COVID-19 untuk mengantisipasi guncangan serupa. Penelitian ini menggunakan uji regresi linier berganda untuk melihat faktor makroekonomi yang terdiri dari GDP, Inflasi, BI Rate, Nilai Tukar, dan JUB sebagai variabel independen dan CAR, NOM, dan NPF sebagai variabel kontrol pada z-score sebagai variabel dependen. Hasil penelitian menunjukkan bahwa variabel GDP

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berpengaruh negatif signifikan sedangkan variabel BI Rate dan Kurs berpengaruh positif signifikan terhadap stabilitas perbankan syariah di masa pandemi COVID-19. Serta variabel inflasi dan JUB menunjukkan hasil yang tidak signifikan. Stabilitasnya kondisi perbankan syariah ditunjukkan dengan fungsi intermediasi perbankan syariah yang berjalan lancar dan mampu bertahan dari berbagai macam guncangan. Hal ini membuktikan bahwa di masa pandemi COVID-19 Pemerintah berhasil mengambil beberapa kebijakan yang terbukti efektif dalam mengambil kebijakan dalam menjalankan perekonomian yang berdampak pada ketahanan stabilitas perbankan syariah.

**Kata Kunci:** Bank Syaria'ah; Z-Skor; Stabilitas Bank; Pandemi Covid-19

## Introduction

Many studies have been conducted to investigate the impact of COVID-19 on banking in the last two years<sup>1</sup>. However, there are no researchers who specifically discuss banking stability during the COVID-19 pandemic which is related to macroeconomic relaxation during the COVID-19 pandemic. The purpose of this research was to explore the macroeconomic influence on banking stability during COVID-19 in anticipation of a similar shock. Along the way, the Indonesian economy has faced several shocks to the economy that have had an impact on banking operations.

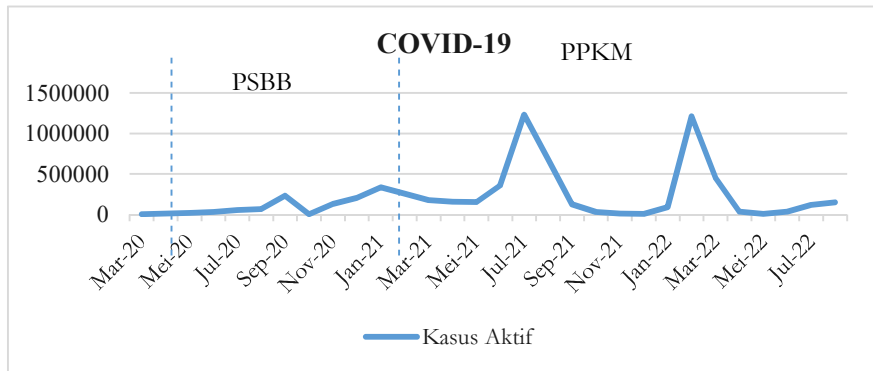
Historically, macroeconomic shocks have occurred due to economic uncertainty, not only for the first time Indonesia has felt it. First, at the time of the 1998 monetary crisis that hit Indonesia. The monetary crisis that occurred due to the paralysis of economic activity due to the decline in the rupiah exchange rate caused banks to go bankrupt so that many banks had to be liquidated<sup>2</sup>. Second, in the 10-year interval in the second decade, the 2008 global crisis caused a significant financial crisis and economic slowdown. This had an impact on the financial sector but the crisis that occurred was safer than the previous crisis. Then, in a time interval of approximately 10 years, shocks

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<sup>1</sup> Ahmad Fatoni, "Pengaruh Ketidakpastian Ekonomi Terhadap Stabilitas Perbankan Syariah Di Indonesia," *Jurnal Ilmiah Ekonomi Islam* 8 (2022): 2903–2909; Stenly Jacobus Ferdinandus, Reniati Reniati, And Hillary Theophani Parera, "Analysis Of Financial Performance Based On The Balanced Scorecard Method Before And During Covid-19 Pandemic At PT. Bank Tabungan Negara, TBK," *Integrated Journal Of Business And Economics* (2022): 270–281; Sukisno Selamat Riadi, Michael Hadjaat, and Rizky Yudaruddin, "Bank Concentration and Bank Stability during the COVID-19 Pandemic," *Emerging Science Journal* 6 (September 7, 2022): 262–274; Rofiul Wahyudi et al., "Determinants of Profitability in Indonesian Islamic Banking: Case Study in the COVID-19 Period," *Integrated Journal Of Business And Economics* (2021): 37–46.

<sup>2</sup> Rahmat Setiawan and Ahmad Aziz Putra Pratama, "Modal, Tingkat Likuiditas Bank, NPL dan Pertumbuhan Kredit Perbankan Indonesia" *Matrik: Jurnal Manajemen, Strategi Bisnis dan Kewirausahaan* (January 29, 2019): 96; H. W Utami, "Analisa Pengaruh Sektor Perbankan Terhadap Pertumbuhan Ekonomi Indonesia Periode 2001–2015," *OECONOMICUS Journal of Economics* 2 (2) (2018).

occurred in the economy so that a pattern of shocks was created to be explored further. This period occurred due to the COVID-19 pandemic which not only rocked Indonesia but also the global economy. Until now, COVID-19 has become the biggest pandemic that has ever happened in the 21st century<sup>3</sup>. This is very historic because the COVID-19 pandemic has had a huge impact on everyday life.<sup>4</sup>



Source: Data processed from the Task Force for Handling COVID-19, 2023

**Graph 1.1**  
**Spread of COVID-19 in Indonesia**

Based on graph 1.1, we can see that within a few months the rate of spread of COVID-19 in Indonesia has occurred so quickly. In Indonesia, the spread of COVID-19 continued to increase in early 2020 and reached a peak in mid-2021. The rapid spread of COVID-19 had a huge impact on the economic sector. Since the World Health Organization (WHO) announced the COVID-19 pandemic on March 11, 2020, in order to overcome the spread rate, restrictions on human activities have been implemented.

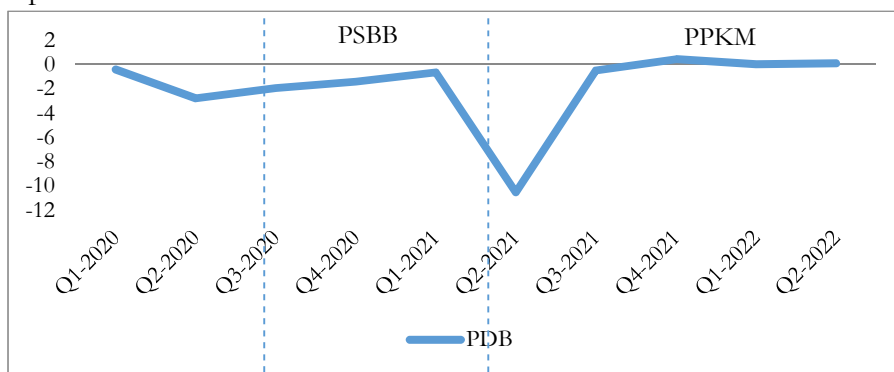
Following up on this, the Indonesian government made a policy to break the chain of transmission of COVID-19 by starting to implement Large-Scale Social Restrictions (PSBB). In addition to the PSBB policy, the Government also implemented a policy of Imposing Restrictions on Community Activities (PPKM). For this reason, if the Government does not take serious steps to implement appropriate policies in reducing the impact of the spread of COVID-19. Indonesia's economic growth has also felt an impact on market mechanisms, not only on fundamental and real economic aspects<sup>5</sup>. Indonesia's economic

<sup>3</sup> Universitas Padjadjaran, Faculty of Fisheries and Marine Sciences, Indonesia et al., "Impact Of The Pandemic Covid-19 To The Indonesia Seas" *GeoJournal of Tourism and Geosites* 40, no. 1 (March 31, 2022): 30–36.

<sup>4</sup> Amanda E. Bates et al., "Global COVID-19 Lockdown Highlights Humans as Both Threats and Custodians of the Environment," *Biological Conservation* 263 (November 2021): 109175.

<sup>5</sup> Azwar Iskandar, Bayu Taufiq Possumah, and Khaerul Aqbar, "Peran Ekonomi dan Keuangan Sosial Islam Saat Pandemi Covid-19" (2020): 14.

growth during COVID-19 experienced a slowdown when compared to the previous period.<sup>6</sup>



Source: Data processed from BPS, 2023

**Graph 1.2**  
**Indonesia's GDP growth for the 2020-2022 quarter**

Graph 1.2 shows GDP growth during the COVID-19 pandemic has decreased. Previously the Ministry of Finance and Bank Indonesia had estimated that Indonesia's economic growth would be between 4% -5% in the first quarter of 2020. However, the fact is that at the beginning of the arrival of COVID-19 in Indonesia, namely in the first quarter of 2020, Indonesia's economic growth when viewed from the Gross Domestic Product (GDP) was below that, namely 2.97% and even decreased to -5.32%. The most severe decline in Indonesia's economic growth occurred in the first quarter of 2021 to III-2021. This is because the economic system is experiencing a slowdown where there is a budget deficit that is used for the health sector.

However, the Government continues to encourage economic growth through increasing public spending so as to improve economic growth during COVID-19. This economic growth is related to banking development, even though there are theoretical differences between economic growth and banking<sup>7</sup>. So that the banking sector has a very important role in maintaining the stability of a country's economy<sup>8</sup>. The functioning of a good intermediary function in banking is expected to be able to support the economy.

<sup>6</sup> Indonesia Bank, "Strategi Memperkuat Ekonomi Di Tengah Ketidakpastian Global," 2022, [https://www.bi.go.id/id/publikasi/ruang-media/news-release/Pages/sp\\_2411422.aspx](https://www.bi.go.id/id/publikasi/ruang-media/news-release/Pages/sp_2411422.aspx).

<sup>7</sup> Umrotul Khasanah and Ahmad Tibrizi Soni Wicaksono, "Intermediary Performance of Islamic Banks in the Disruption Era: Does It Contribute to Economic Growth?," *Banks and Bank Systems* 16, no. 1 (2021): 103–115.

<sup>8</sup> F Fahrial, "Peranan Bank Dalam Pembangunan Ekonomi Nasional," *Ensiklopedia of Journal* 1, no. 1 (2018): 179–184; Setiawan and Pratama, "Modal, Tingkat Likuiditas Bank, NPL dan Pertumbuhan Kredit Perbankan Indonesia"; Utami, "Analisa Pengaruh Sektor Perbankan Terhadap Pertumbuhan Ekonomi Indonesia Periode 2001–2015."

Stable banking is shown by healthy banking conditions and the functioning of the intermediary function well<sup>9</sup>. The better the bank's financial performance, it will help maintain banking stability in supporting the resilience of financial stability<sup>10</sup>. Apart from aspects of financial performance, many researchers also conduct reviews of other aspects of financial institutions, especially banking<sup>11</sup>. There are several studies suggesting that economic shocks will affect banking activities<sup>12</sup>. This shows that in maintaining bank stability it is also necessary to look at the macroeconomic shocks that occur in the economy.

Based on previous research conducted related to the influence of financial factors in bank performance and macroeconomics, it shows that inflation variables and BI rates have a significant effect on banking stability<sup>13</sup>. Meanwhile, previous research related to the influence of macroeconomic indicators on the Return On Asset (ROA) of Islamic banks shows that exchange rate and inflation variables have a significant effect on the ROA of Islamic banks<sup>14</sup>. Based on the explanation above, we can see that the shocks that occur form the same time interval pattern so that they have an impact on the economy and also have an impact on the banking system. This research needs to be done to see the impact of the shock in the form of the COVID-19 pandemic which has an effect on the macro economy on the stability of Islamic Commercial Banks in Indonesia.

### **Islamic Bank Stability**

According to Law No. 7 of 1992 which was later revised to Law No. 10 of 1998 concerning banking "A bank is a business entity that collects funds from the

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<sup>9</sup> A. H Ntarmah, Y Kong, and M. K Gyan, "Banking System Stability and Economic Sustainability: A Panel Data Analysis of the Effect of Banking System Stability on Sustainability of Some Selected Developing Countries," *Quantitative Finance and Economics* 3 (4) (2019): 709; Setiawan and Pratama, "Modal, Tingkat Likuiditas Bank, NPL dan Pertumbuhan Kredit Perbankan Indonesia"; Daniel Siahaan and Nadia Asandimitra, "Pengaruh Likuiditas Dan Kualitas Aset terhadap Profitabilitas pada Bank Umum Nasional (Studi pada Bursa Efek Indonesia Periode 2010-2014)," *BISMA (Bisnis dan Manajemen)* 9, no. 1 (April 6, 2018): 1.

<sup>10</sup> Martin T. Bohl, Philip Michaelis, and Pierre L. Siklos, "Austerity and Recovery: Exchange Rate Regime Choice, Economic Growth, and Financial Crises," *Economic Modelling* 53 (February 2016): 195–207; Peterson K. Ozili, "Non-Performing Loans and Financial Development: New Evidence," *The Journal of Risk Finance* 20, no. 1 (January 21, 2019): 59–81.

<sup>11</sup> barianto Nurarsi Sudarmawan, "Sosio-Ekonomi Sebagai Faktor Non-Performing Financing pada Lembaga Keuangan Mikro Syariah," *El Dinar* 10, no. 1 (April 14, 2022): 32–44.

<sup>12</sup> Hanifah Rahmi and Dewi Zaini Putri, "Analisis Efisiensi Perbankan Syariah Selama Krisis Global Di Indonesia" *Jurnal Kajian Ekonomi dan Pembangunan* 1, no. 2 (July 9, 2019): 321; Bayu Wulandari and Ketryn Seviyani, "Pengaruh Loan To Deposit Ratio (LDR), Biaya Operasional, Pendapatan Operasional (BOPO), Kurs, Capital Adequacy Ratio, Ukuran Bank Dan Inflasi Terhadap Non Performing Loan (NPL) Di Perusahaan Perbankan Terdaftar Di BEI" (2021): 8.

<sup>13</sup> Ririt Iriani Sri Setiawati, "Analisis Pengaruh Faktor-Faktor Fundamental Kinerja Bank dan Makro Ekonomi terhadap Stabilitas Perbankan Di Indonesia" *Jurnal Ilmiah Bisnis dan Ekonomi Asia* 14, no. 2 (August 8, 2020): 123–132.

<sup>14</sup> Oktoviana Banda Saputri, "Pengaruh indikator makroekonomi terhadap profitabilitas perbankan syariah di indonesia tahun 2015–2020" (2021).

public in the form of deposits and distributes them to the public in the form of credit and or other forms in order to improve the standard of living of many people". As for Law Number 21 of 2008 concerning Islamic banking, "Sharia Banks are banks that carry out their business activities based on Sharia Principles and according to their type consist of Sharia Commercial Banks and Sharia People's Financing Banks". Meanwhile, Sharia Commercial Banks are Islamic banks that in their activities provide services in payment traffic.

Based on Bank Indonesia Regulation No. 16/11/PB/2014 concerning Macro prudential Regulation and Supervision, it is explained that financial system stability is a condition that allows the national financial system to function effectively and efficiently and can withstand shocks that occur both internally and externally allocated as a source of funding or financing that can contribute to the growth and stability of the national economy as a whole. Thus, Islamic banking stability is a condition when the intermediation function in the banking industry can run smoothly and can survive shocks stemming from internal factors in the form of financial and external banking performance in the form of macroeconomics. Currently, macroeconomic conditions are experiencing uncertainty. Uncertainty in the macroeconomics will have an impact on the stability of Islamic banking.

In this case, it explains macroeconomics where all humans will not know what will happen in the future. So it is very necessary to carry out risk mitigation with the aim of minimizing the risks that can occur due to the uncertainty of economic conditions so that they are able to face these risks. Thus, Islamic banks need to mitigate the risks that will occur from macroeconomic factors in order to create Islamic banking stability.

### **The Relationship between Macroeconomic Variables and Bank Stability**

Economic growth is a very important indicator in analyzing a country's economic development. Theoretical considerations are related to GDP growth which shows positive performance of an economy both from the real sector and in the financial sector. Thus economic growth using GDP at constant prices has an influence on bank stability. As with empirical research conducted by with the result that GDP has a positive influence on bank stability<sup>15</sup>. This means that the

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<sup>15</sup> F Alqahtani and D.G Mayes, "Financial Stability of Islamic Banking and the Global Financial Crisis: Evidence from the Gulf Cooperation Council," *Economic Systems* 42 (2018): 346–360; Ahmad Fatoni and Sahabudin Sidiq, "Analisis Perbandingan Stabilitas Sistem Perbankan Syariah dan Konvensional Di Indonesia," *Ekspansi: Jurnal Ekonomi, Keuangan, Perbankan dan Akuntansi* 11, no. 2 (November 30, 2019): 179–198; Elda Oktavianti and Satria Tri Nanda, "Analisis Pengaruh CAR, NPF, BOPO, Inflasi, Produk Domestik Bruto dan Suku Bunga Bi Terhadap Pertumbuhan Perbankan Syariah" 16, no. 1 (n.d.): 10; Abdul Rashid, Saba Yousaf, and Muhammad Khaleequzzaman, "Does Islamic Banking Really Strengthen Financial Stability? Empirical

GDP causes an increase in the economy which also increases the ability of customers to fulfill their obligations and increases the interest of customers to save their money in the bank.

Inflation is a general increase in prices continuously and occurs consistently from a country's economy. Studies conducted yield results that inflation has a significant effect on bank stability<sup>16</sup>. The general increase in prices caused by inflation will cause an increase in interest rates and will reduce bank stability. Meanwhile, according to research conducted shows that inflation has a positive effect on bank stability<sup>17</sup>.

BI Rate or interest rate is a policy implemented by Bank Indonesia in order to maintain monetary stability. The BI interest rate, or usually called the BI Rate, which has increased will increase the potential for unstable financial conditions. This is assumed because credit or financing disbursed by banks will be disrupted because customers experience default due to interest rates increasing compared to the previous period. So that the interest rate or BI Rate has a negative effect on bank stability<sup>18</sup>.

Exchange rate is the relative price of the exchange rate of a country's currency with other countries. A depreciating exchange rate will have an impact on decreasing banking performance. This can happen because competing companies take action to reduce production costs, but of course this will have an impact on decreasing profitability, so that banks will reduce the distribution of funds to companies. If the exchange rate strengthens, it will have a good impact on banking stability. For this reason, the exchange rate has a positive effect on bank stability<sup>19</sup>.

Amount of money in circulation (JUB) is the amount of money demanded by the public that is regulated by Bank Indonesia. JUB consists of currency and

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Evidence from Pakistan," *International Journal of Islamic and Middle Eastern Finance and Management* 10, no. 2 (June 19, 2017): 130–148.

<sup>16</sup> Naama Trad et al., "Banking Stability in the MENA Region during the Global Financial Crisis and the European Sovereign Debt Debacle," *The Journal of Risk Finance* 18, no. 4 (August 21, 2017): 381–397.

<sup>17</sup> Soeharjoto Soekapdjo, Debbie Aryani Tribudhi, and Lucky Nugroho, "Pengaruh Fundamental Ekonomi dan Kinerja Keuangan Terhadap Kredit Bermasalah Pada Bank Syariah Di Indonesia," *Ekonika : Jurnal ekonomi universitas kadiri* 4, no. 2 (August 26, 2019): 126.

<sup>18</sup> Arzi Prima Anindya, Fitriani Aprilianto, and Atut Frida Agustin, "Pengaruh Inflasi, BI Rate, Dan Kurs Terhadap Profitabilitas (ROA) Bank Umum Syariah Di Indonesia Periode 2012 - 2022" . *May* 1 (2022); Ririt Iriani Sri Setiawati, "Analisis Pengaruh Faktor-Faktor Fundamental Kinerja Bank dan Makro Ekonomi terhadap Stabilitas Perbankan Di Indonesia" *Jurnal Ilmiah Bisnis dan Ekonomi Asia* 14, no. 2 (August 8, 2020): 123–132.

<sup>19</sup> Anindya, Aprilianto, and Agustin, "Pengaruh Inflasi, BI Rate, Dan Kurs Terhadap Profitabilitas (ROA) Bank Umum Syariah Di Indonesia Periode 2012 - 2020"; Oktoviana Banda Saputri, "Pengaruh indikator makroekonomi terhadap profitabilitas perbankan syariah di indonesia tahun 2015–2020" (2021).

demand deposits called M1 and M2 consisting of M1 plus quasi money and securities other than shares. It can be seen that the greater the amount of money circulating in the community, the greater the possibility for customers to collect their funds from banks so that banks will obtain profitability which reflects that the bank is in a stable condition. So that JUB will have a positive effect on bank stability.<sup>20</sup>

## Methods

The type of research used is descriptive research with a quantitative approach. The sampling technique used in this study was purposive sampling. For analysis purposes, the data obtained and used are data from time to time (time series) during the period March 2020 - August 2022. In this study a multiple linear regression test was used using E-Views software to test external factors in the form of macroeconomic factors (GDP, Inflation, BI Rate, Exchange Rate, and JUB) and control variables in the form of (CAR, NOM, and NPF) on the stability of Islamic banking in Indonesia during the COVID-19 pandemic.

$$\text{ZSTAB} = \alpha + \beta_1 \text{GDP} - \beta_2 \text{Inflation} + \beta_3 \text{BI Rate} + \beta_4 \text{Exchange Rate} + \beta_5 \text{JUB} + e$$

**Table 3.1**  
**Operational Definition Variable**

Variable	Definition	Formula	Source
<b>Dependent Variable</b>			
Bank Stability	Bank stability is a condition when the intermediary function runs well and is able to withstand shocks that caused by internal and external banking factors.	$\text{Z-Score} = \frac{\text{ROA} + \left(\frac{E}{A}\right)}{\sigma \text{ROA}} \times 100\%$	<sup>21</sup>
<b>Independent Variable</b>			
GDP	Market value of all final goods and services produced by a country in a certain period.	$\text{GDP} = \frac{\text{GDPn} - \text{GDP}(n-1)}{\text{GDP}(n-1)} \times 100\%$	Central Agency on Statistics (BPS)
BI Rate	The policy interest rate reflects the monetary policy stance set by Bank Indonesia and announced to the public.	-	Central Agency on Statistics (BPS)
Inflation	The tendency for prices to increase in general or continuously.	$\text{Inflation} = \frac{\text{CPI}n - \text{CPI}(n-1)}{\text{CPI}(n-1)} \times 100\%$	Central Agency on Statistics (BPS)
Exchange Rate	Exchange rates describe the price level of exchange from one currency to another currency used in various transactions.	$\text{Exchange Rate} = \frac{\text{Money in after exchange}}{\text{Money before exchange}}$	Central Agency on Statistics (BPS)

<sup>20</sup> Amirus Sodiq, "Analisis Pengaruh Inflasi, Produk Domestik Bruto Dan Jumlah Uang Beredar Terhadap Return On Asset Bank Syariah" *EQUILIBRIUM 2* (2014): 208–225.

<sup>21</sup> Ibnu Zakaria Dwinanda and Chorry Sulistyowati, "The Effect of Credit Risk and Liquidity Risk on Bank Stability," *Jurnal Ilmu Ekonomi Terapan* 6, no. 2 (November 29, 2021): 255; Firna Hayyu Nindya Maritsa and Agus Widarjono, "Indonesian Islamic Banks and Financial Stability: An Empirical Analysis," *EkBis: Jurnal Ekonomi dan Bisnis* 5, no. 1 (June 29, 2021): 71–87; Riadi, Hadjaat, and Yudaruddin, "Bank Concentration and Bank Stability during the COVID-19 Pandemic."



JUB	The money supply (M2) is the amount of money demanded by the public which is regulated by Bank Indonesia.	$M2 = M1 + TD$	Central Agency on Statistics (BPS)
<b>Control Variable</b>			
<i>Capital Adequacy Ratio (CAR)</i>	Capital or capital, which is a bank valuation method based on the bank's capital using the CAR ratio.	$CAR = \frac{\text{Capital}}{\text{ATMR}} \times 100\%$	The Financial Services Authority (OJK)
<i>Net Operating Margin (NOM)</i>	A ratio that describes net operating income so that the ability of average earning assets to generate profit is known.	$NOM = \frac{\text{Net Income}}{\text{Average Assets}} \times 100\%$	The Financial Services Authority (OJK)
<i>Non Performing Financing (NPF)</i>	Comparison ratio between the amount of financing provided with Third Party Funds (DPK) and capital compared to total loans given.	$NPF = \frac{\text{Financing Problem}}{\text{Total Financing}} \times 100\%$	The Financial Services Authority (OJK)

Source: Data processed by the author, 2023

## Result and Discussion

### Descriptive Statistic

Table 4.1  
Descriptive Statistic

Variable	Minimum	Maximum	Mean	Stand Dev	N
STAB	5,420	8,408	6,958	1,007	30
CAR	20,360	25,710	22,804	1,694	30
NOM	1,340	2,620	1,957	0,460	30
NPF	2,580	3,430	3,046	0,306	30
PDB	-5,320	7,070	2,777	3,853	30
Inflasi	1,320	4,940	2,189	1,035	30
BI Rate	3,500	4,500	3,725	0,331	30
Kurs	14084	16367	14549	429	30
JUB	6238267	7911484	7160555	523425	30

Source: Data processed by the author, 2023

### Classical Assumption Test

#### Normality Test

Tabel 4.2  
Normality Test

<i>Jarque bera</i>	1.865131
<b>Probability</b>	0.393543

Source: Data processed by Eviews 12

Based on table 4.2 the normality test can be seen that the value of Jarque fallow and probability is  $0.393543 > 0.05$  or  $H_0$  is accepted and  $H_1$  is rejected. So that the residual variable in the regression model is declared to be normally distributed.

## Multicollinearity Test

**Tabel 4.3**  
**Multicollinearity Test**

Variable	VIF Value
CAR	2.352415
NOM	2.060335
NPF	2.003052
PDB	3.274721
Inflasi	3.551212
BI Rate	2.128884
Kurs	4.786728
JUB	1.119440

Source: Data processed by Eviews 12

Based on table 4.3 the multicollinearity test using the VIF value, it can be seen that the VIF values of the GDP, Inflation, BI Rate, Exchange Rate, JUB, CAR, NOM, and NPF variables are at intervals of 1-10 values. So based on the test criteria,  $H_0$  is accepted and  $H_1$  is rejected. Thus the regression model formed does not show symptoms of multicollinearity.

## Heteroscedasticity Test

**Tabel 4.4**  
**Heteroscedasticity Test**

<b>Prob. F</b>	0.4887
<b>Prob. Chi-Square (Obs R-Square)</b>	0.4276
<b>Prob. Chi-Square (Scaled Explained SS)</b>	0.5725

Source: Data processed by Eviews 12

Based on table 4.4 of the glejser heteroscedasticity test it can be seen that the probability value of each variable is greater than 0.05. So that  $H_0$  is accepted and  $H_1$  is rejected, which means that the residual is homogeneous or there is no heteroscedasticity problem.

## Autocorrelation Test

**Tabel 4.5**  
**Autocorrelation Test**

<b>Obs R-Square</b>	0.4281
<b>Prob. Chi-Square</b>	0.2776

Source: Data processed by Eviews 12

Based on table 4.5 of the Breusch-Godfrey Serial Corellation LM Test it is known that the Obs R-Square value is  $0.4281 > 0.05$ . So the results of the study are that  $H_0$  is accepted and  $H_1$  is rejected, meaning that there is no autocorrelation in the residuals.

## Hypothesis Testing Results

### Simultaneous Hypothesis Testing

**Tabel 4.6**  
**Simultaneous Test**

<b>F-Statistic</b>	423.9498
<b>Prob (F-Statistic)</b>	0.00000

Source: Data processed by Eviews 12

Simultaneous hypothesis testing produces F-statistics = 423.9298 with a probability of 0.00000 the test results show a probability smaller than 0.05, so that  $H_0$  is rejected and  $H_1$  is accepted. This means that GDP, inflation, BI Rate, Exchange Rate, JUB, CAR, NOM, and NPF have a significant simultaneous effect on bank stability (ZSTAB).

### Partial Hypothesis Testing

**Tabel 4.7**  
**Partial Test**

<b>Variable</b>	<b>Coefficient</b>	<b>t-Statistic</b>	<b>Probability</b>
CAR	0.165730	8.999548	0.0000
NOM	2.425865	34.33429	0.0000
NPF	0.986202	11.98614	0.0000
PDB	-0.021726	-3.165424	0.0047
Inflasi	0.045336	1.892329	0.0723
BI Rate	0.414882	3.644403	0.0015
KURS	3.443360	5.359323	0.0000
JUB	-0.237120	-0.167981	0.8682

Source: Data processed by Eviews 12

The magnitude of the contribution of financial and macroeconomic performance to bank stability is known through the coefficient of determination which is equal to 0.991502 or 99.1502%. These results indicate that the diversity of bank stability can be explained by macroeconomics and the control variance in the form of financial performance is 99.3846%. While the remaining 0.6154% is explained by other variables not discussed in this study. Based on the R-Squared value of 0.993846 it can be seen that the relationship between the independent variables and the control variable with the dependent variable has a strong correlation pattern because the value of 0.993846 is close to 1.

### Multiple Linear Regression Empirical Model

$$\text{ZSTAB} = -6.145 - 0.022 \text{ GDP} + 0.045 \text{ Inflation} + 0.415 \text{ BI Rate} + 3.443 \text{ Exchange Rate} - 0.237 \text{ JUB} + e$$

The constant for Islamic Commercial Banks (BUS) has a value of -6.145 which shows the stability of BUS during the COVID-19 pandemic of -6.145%. From the results of the analysis of the Islamic Commercial Bank (BUS) model, it shows that the coefficient value on the value of the bank stability variable (STAB) when the macroeconomic variables consist of GDP, Inflation, BI Rate, Exchange

Rate, and JUB as well as control variables consisting of CAR, NOM, and NPF constant or fixed value.

### **The Effect of GDP on Islamic Banking Stability During the COVID-19 Pandemic**

Based on the partial test results it is shown that the GDP variable has a probability value of  $0.0047 < 0.05$  indicating that the partial GDP variable has a significant negative effect on bank stability. This means that every 1% change in GDP will affect a decrease in bank stability by 6.144847%. This is in line with research conducted showing that GDP has a negative effect on bank stability<sup>22</sup>. This is due to competition between banks so that GDP growth will result in bank instability. In contrast to research conducted with the result that GDP growth has an influence positive for bank stability<sup>23</sup>. Apart from that, policy relaxation implemented by the Government in the form of monetary and physical policies has enabled banks to survive during the COVID-19 pandemic. This policy was then responded by Islamic banking by implementing financing restructuring policies. So that when GDP declines, banks can still survive. When the economy experienced a downturn, the government succeeded in carrying out a series of policies to protect banks as intermediary institutions that were important to protect. This shows that during the COVID-19 pandemic the decline in GDP that occurred led to the creation of stability for Islamic Commercial Banks (BUS) in Indonesia.

### **The Effect of Inflation on Islamic Banking Stability During the COVID-19 Pandemic**

Partial hypothesis testing on the inflation variable has a probability value of  $0.0723 > 0.05$  indicating that the partial inflation variable has an insignificant effect on bank stability. This is in line with research conducted showing that

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<sup>22</sup> Martin Cihak and Heiko Hesse, "Islamic Banks and Financial Stability: An Empirical Analysis," *IMF Working Paper Series*, no. 932 (2008); N Lassoued et al., "The Impact of State and Foreign Ownership On Banking Risk: Evidence From The Mena Countries," *Research in International Business and Finance* (2015); Wiwin Riski Windarsari and Zainuddin S, "Analisis Kausalitas Stabilitas Perekonomian Terhadap Pengembangan Bank Syariah Menggunakan Pendekatan Vector Error Correction Model," *Al-Kharaj: Journal of Islamic Economic and Business* 2, no. 1 (April 8, 2020): 1–15.

<sup>23</sup> Alqahtani and Mayes, "Financial Stability of Islamic Banking and the Global Financial Crisis: Evidence from the Gulf Cooperation Council."; Fatoni and Sidiq, "Analisis Perbandingan Stabilitas Sistem Perbankan Syariah Dan Konvensional Di Indonesia"; Elok Heniwati, "Studi Empiris Kekuatan Stabilitas Keuangan Perbankan Syariah di Indonesia," *Jurnal Ekonomi Bisnis dan Kewirausahaan* 8, no. 2 (August 29, 2019): 147; Ahmad Y Khasawneh and Husam Aldeen Al-Khadash, "Risk And Profitability In Middle East And North Africa Banking System: An Examination Of Off Balance Sheet Activities" 8, no. 3 (2014): 14; Oktavianti and Nanda, "Analisis Pengaruh CAR, NPF, BOPO, Inflasi, Produk Domestik Bruto dan Suku Bunga BI Terhadap Pertumbuhan Perbankan Syariah"; Rashid, Yousaf, and Khaleequzzaman, "Does Islamic Banking Really Strengthen Financial Stability?"

inflation has no significant effect on bank stability<sup>24</sup>. The research results can be explained that the inflation variable has no sensitivity to influence the extent to which bank stability is rapidly experiencing economic changes made by the government to support the banking sector, so as to achieve relative stability in banking operations. In contrast to research that has been conducted shows that inflation has a positive effect on bank stability<sup>25</sup>. Based on inflation data during the COVID-19 pandemic, it shows that Indonesia's inflation has fluctuated, which experienced a very sharp decline in June and deflation occurred in August. The inflation rate which is getting lower to the point of touching deflation is caused by people's purchasing power which has decreased during the COVID-19 pandemic. So that the inflation rate that occurs does not affect the stability of Islamic Commercial Banks (BUS) during the COVID-19 pandemic.

### **The Effect of the BI Rate on Islamic Banking Stability During the COVID-19 Pandemic**

The results of the partial test show that the BI Rate variable has a probability value of  $0.0015 < 0.05$  indicating that the partial BI Rate variable has a significant positive effect on bank stability. This means that every 1% change in the BI Rate will affect bank stability by 0.414882%. This is in contrast to research which shows that the BI Rate has a negative effect on bank stability<sup>26</sup>. The BI Rate will be followed by high interest rates and increase credit/financing risk, thereby causing liquidity risk and bad credit/financing to increase. However, during the COVID-19 pandemic, Islamic banking in overcoming the inability of customers to fulfill their obligations implemented a policy in the form of financing restructuring so that customers who had difficulty paying off loans caused by the impact of the COVID-19 pandemic could be overcome. So that the increase in the BI Rate applied by Bank Indonesia can encourage the creation of bank stability during the COVID-19 pandemic.

### **The Effect of Exchange Rate on Islamic Banking Stability During the COVID-19 Pandemic**

Based on the partial test results it was shown that the exchange rate variable had a probability value of  $0.0000 < 0.05$  indicating that the partial exchange rate variable had a significant positive effect on bank stability. This means that every 1% change in the exchange rate will affect bank stability by

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<sup>24</sup> Faris Nasif Alshubiri, "Determinants of Financial Stability: An Empirical Study of Commercial Banks Listed in Muscat Security Market," *Journal of Business & Retail Management Research* 11, no. 4 (August 1, 2017): 192–200.

<sup>25</sup> Soekapdjo, Tribudhi, and Nugroho, "Pengaruh Fundamental Ekonomi dan Kinerja Keuangan Terhadap Kredit Bermasalah Pada Bank Syariah Di Indonesia."

<sup>26</sup> Sri Setiawati, "Analisis Pengaruh Faktor-Faktor Fundamental Kinerja Bank Dan Makro Ekonomi Terhadap Stabilitas Perbankan Di Indonesia."

3.443360%. The exchange rate or rupiah exchange rate has a positive effect on bank stability<sup>27</sup>. The high exchange rate reached its highest level due to the establishment of policy stipulations during the COVID-19 pandemic. So that the strengthening of the Indonesian exchange rate will cause difficulties for customers in fulfilling their obligations so that banks take steps to implement a financing restructuring policy which will reduce the risk of non-performing financing so that it will increase bank stability. The increase in the exchange rate or exchange rate in Indonesia under supervision by Bank Indonesia as the regulator uses a free floating exchange rate system to maintain the stability of the exchange rate. So that during the COVID-19 pandemic the exchange rate was in a stable condition thereby encouraging the creation of sharia banking stability.

### **The Effect of JUB on Islamic Banking Stability During the COVID-19 Pandemic**

Based on the results of the partial test, it shows that the JUB variable has a probability value of  $0.8682 > 0.05$  indicating that the partial JUB variable has an insignificant effect on bank stability. This is not in line with research which shows that JUB will have a positive effect on bank stability<sup>28</sup>. This means that the greater the amount of money circulating in the community, the greater the possibility for customers to collect their funds from banks so that banks will obtain profitability which reflects that the bank is in a stable condition. However, during the COVID-19 pandemic, the money supply (JUB) did not affect bank stability. Even though the JUB circulating in the community has increased during the COVID-19 pandemic, the JUB is used for handling COVID-19. The government stipulates a policy of refocusing and reallocating the budget used for handling COVID-19. So that JUB during the COVID-19 pandemic did not have an impact on the stability of Islamic banking.

### **Conclusion**

The stable condition of Islamic banking with the intermediation function in Islamic banking runs smoothly and can survive various shocks. The empirical findings show that the macroeconomic shocks that occurred during the COVID-19 pandemic were responded to by the Government by making a series of monetary and physical policies. Physical policy implementation is in the form of refocusing activities and budget reallocation, while in the monetary sector it is in the form of maintaining the rupiah exchange rate, controlling inflation and providing monetary stimulus for the business world as well as relaxing bank

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<sup>27</sup> Anindya, Aprilianto, and Agustin, "Pengaruh Inflasi, Bi Rate, Dan Kurs Terhadap Profitabilitas (ROA) Bank Umum Syariah Di Indonesia Periode 2012 - 2020"; Saputri, "Pengaruh indikator makroekonomi terhadap profitabilitas perbankan syariah di indonesia tahun 2015–2020."

<sup>28</sup> Sodik, "Analisis Pengaruh Inflasi, Produk Domestic Bruto dan Jumlah Uang Beredar Terhadap Return On Asset Bank Syariah."

credit/financing and intensifying financing in the form of People's Business Credit (KUR). In addition, Islamic banks responded by implementing financing restructuring for customers affected by the COVID-19 pandemic. The policy response has made Islamic banking more stable and able to adapt to the shocks that occur, thus making Islamic banking more able to survive and be stable.

This research has implications that macroeconomics has an influence on the stability of Islamic banking so that when there is a shock, the Government is required to take the right strategy in the form of physical and monetary policies in order to maintain bank stability. This finding proves that during the COVID-19 pandemic the Government has succeeded in taking several policies that have proven effective in taking policies in running the economy that have an impact on the stability of Islamic banking. Although this study made a significant theoretical and empirical contribution, it has some limitations and becomes a recommendation for subsequent research. Since this research only focuses on one country and on Islamic banking only, the next research is expected to explore cross-borders and other financial institutions such as conventional banks.

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