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Stability and Performance of Conventional and Sharia Banking in Indonesia Before and After the Covid-19 Pandemic

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Abstract

This study examines the impact of the COVID-19 outbreak on the performance and stability of Indonesia's dual banking system. Our sample includes the top 20 banks by assets, both conventional and sharia, from 2018 Q1 to 2023 Q3. Data for conventional banks is obtained from Bloomberg, while data for Islamic banks is sourced from each bank's official website. We use ROA, ROE, and NIM as performance variables and Z-Score and NPL as stability variables. External factors such as GDP, Inflation, BI Rate, and Exchange Rate serve as independent variables, while bank-specific variables act as controls. Panel data regression is used to determine causal relationships between these factors and banking performance and stability. We also compare bank performance and stability before and after COVID-19 using the Mann-Whitney Test. Findings indicate that the pandemic significantly affected conventional banks' Z-Score, NPL, ROA, ROE, and NIM, while only NPL was significantly affected in sharia banks. The results highlight the significant impact of GDP, exchange rate, and BI Rate on banking variables, while inflation had no effect. The type of bank significantly influences performance but not stability.

Keywords: Banking Performance, Banking Stability, Conventional Banks, Islamic Banks, COVID-19.

Introduction

The COVID-19 pandemic has significantly impacted the global economy and the stability of the financial and banking systems. Countries worldwide have implemented lockdown policies to prevent the spread of the virus, leading to limitations on human movement and various global economic crises (Chohan

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and Usman, 2022). Consequently, the pandemic has resulted in macroeconomic effects such as reduced GDP, increased unemployment rates, and disrupted international trade, emphasizing the necessity for interdisciplinary research to understand and address these challenges (Mistry, 2023).

Excepting the economic impact, the COVID-19 outbreak also hurts financial performance and global financial stability including default risk, liquidity risk, and asset risk, both in conventional and Sharia banking (Elnahass et al, 2021). Numerous studies have emphasized that this pandemic has led to unprecedented uncertainty in the banking sector, affecting market challenges, monetary policy, credit quality, and compliance pressures (Pamungkas et al, 2023; Kirchner, 2023). Banking stability and performance have become a key focus of research during the economic crisis due to the crucial role played by the banking sector in economic sustainability and recovery.

Banking stability is crucial in addressing economic and financial crises. It contributes to economic growth, ensures the resilience of the financial system, and helps limit risks. Studies have shown that the crisis has impacted banking stability, particularly in terms of the effectiveness of countercyclical policies such as credit relaxation measures. These policies have had varying impacts on different types of banks, especially small and state-owned banks (Huang, 2023). This situation has led to unprecedented disruption in financial stability, with asset prices at risk of collapsing and market volatility soaring. This, in turn, has increased expectations of default, resulting in higher borrowing costs and decreased market liquidity (IMF, 2020). Studies emphasize that during times of crisis, a stable banking system is crucial for maintaining economic growth (Gibson, 2022). Factors such as bank capital, liquidity creation, and asset diversification are identified as the main determinants of bank stability. Bank capital, in particular, has a positive impact on stability through liquidity creation (Ijaz et al., 2020). Understanding and improving bank stability is an important aspect of effectively managing economic and financial crises.

Banking performance becomes very important during the economic crisis because banks play a crucial role in maintaining financial stability through smooth payment systems and economic recovery through banking intermediation. Banking system stability cannot be achieved when banking performance is problematic. As in other countries, the banking sector has a dominant share in the financial system. Therefore, failure in this sector results in financial instability and disrupts the economy. (OJK, 2023). Studies show that during periods of crisis, banks, as significant financial intermediaries, seek to adopt strategies to

obtain sustainable profitability, especially in uncertain and risky conditions such as the financial crisis (Harangus, 2012). Improving bank performance has a positive impact on financial stability, as evidenced in African countries where there is a strong relationship between bank performance and stability, thus emphasizing the need to improve performance to increase sector stability (Antwi and Kwakye, 2022). Efforts such as injecting liquidity during a crisis can help restore bank lending and overall financial health, thereby providing more significant benefits for large banks (Isyuk, 2013).

Research conducted in 106 countries and 2,073 banks by Shabir et al. (2023) shows that the Covid-19 pandemic has put significant pressure on the decline in banking performance and stability. This global study provides information that in general, the pandemic has had a negative and significant impact on performance in the form of a significant reduction in bank profitability of around 0.38% and banking stability in the form of increased risk of default and operational risk. The author uses this research as the main reference in addition to other related studies.

Extensive international research on the economic and banking implications of the COVID-19 pandemic has prompted local scholars to conduct in-depth analyses of specific case studies on the banking sector in Indonesia that operates a dual banking system, with both conventional and sharia banking coexisting to drive economic growth. These two systems significantly influence the stability of the country's financial sector. Conventional banks have a more established presence and cater to numerous corporate clients, while sharia banking, although currently holding a market share of 6% to 7%, has been experiencing annual growth rates of over 10% with strong performance and a rapidly expanding retail market. Furthermore, Indonesia stands out as one of the few countries that weathered the global financial crises of 2008 and 2018 more effectively than others.

Generally, studies regarding similar research in Indonesia typically relies on data from 2019 to 2021 when the pandemic is still ongoing. However, these datasets may not fully capture the banking performance and stability during that pandemic period because the peak of economic crisis due to the pandemic is about in the 2020-2022 period. Furthermore, IMF has estimated that it may take up to five years for Indonesia's economy to fully recover, including the recovery of banking performance. To offer a more comprehensive assessment of banking stability and performance in Indonesia, the author intends to conduct a study using data from 2018 to 2023 and based on the research conducted by Shabir et

al. (2023) where the research used banking performance (ROA, ROE, and NIM) as well as banking stability (Z-Score and NPL) indicators. The research sample was drawn from both sharia-compliant and conventional banking, which collectively represent over 70% of the industrial assets in each population.

In Addition, even though Indonesia performing dual banking system, study about impact pandemic covid-19 to banking stability and performance mostly perform separately so that it is difficult to compare what kind of system which better to face financial crisis. This research will make better empirical contribution in describing the impact of pandemic covid-19 on banking performance and stability in Indonesia using Mann Whitney test in order to see difference banking stability and performance pre and post covid-19. Furthermore, to find a causal relationship between crisis conditions reflected in economic growth, BI Rate, Kurs and inflation to banking performance and stability, the author uses the panel data regression as has been done by Shabir et al. (2023).

Methods

This research method is quantitative, comparing financial performance and stability before and after the emergence of Covid-19 between Commercial Banks and Sharia Commercial Banks. Testing uses descriptive statistical analysis to examine the difference in averages, specifically the Mann-Whitney Test, because the variable data is not normally distributed. Furthermore, to understand the causal relationship between the independent and dependent variables being studied, testing was carried out using panel regression with a choice of the Common Effect Model, Fixed Effect Model, and Random Effect Model. Researchers also conducted classical assumption tests to complete the regression step using three types of tests: autocorrelation tests, multicollinearity tests, and heteroscedasticity tests.

The object of this study uses financial statement data from 10 conventional banks and 10 sharia commercial banks, arranged and sorted by the highest assets in each group. Each group sample represents over 70% of the population by assets. This research uses quarterly panel data from 2018Q1 to 2023Q3. The period was chosen to provide a reference for financial data over the last six years before and during the Covid-19 pandemic. All data sources come from officially reported financial statements of the banks. Conventional bank data was gathered from commercial websites such as Bloomberg, while the sharia bank data was hand-collected from each official website. To ensure that Bloomberg data matches the official bank data, the author cross-checked several data points using reports from the company's website by sampling. Country-specific variables such as GDP Growth, GDP per capita, Inflation, Exchange

Rate, and BI Rate were taken from the official websites of the Central Bank of Indonesia (BI) and the Indonesia Central Bureau of Statistics (BPS).

Bank performance measurement uses three accounting-based measures as dependent variables to evaluate bank performance, namely ROA, ROE, and NIM, following previous studies by Elnahass et al. (2021) and Shabir et al. (2023). ROA and ROE are popular indicators of bank performance, with ROA measuring profitability in relation to total assets and ROE related to equity optimization. Additionally, Net Interest Margin (NIM) reveals the amount of money that a bank earns in interest on loans compared to the amount it pays in interest on deposits, serving as an indicator of a bank's profitability and growth. For bank stability measurement, we employ alternative bank stability proxies, including the Z-score for bank default risk, the non-performing loan ratio (NPL) for bank credit risk, and the volatility of net interest margin (NIM) for bank operational risk. The Covid-19 indicator uses a time dummy to separate pre- and post-Covid-19 periods. Bank-specific control variables include bank size, capitalization, liquidity, asset structure, and diversification.

Results and Analysis

This research used 20 bank samples consisting of 10 sharia commercial banks and 10 conventional commercial banks based on the largest assets representing more than 70% of the population, namely:

Table 3.1. Research Sample (until September 2023; in Million Rupiah)

Sharia Compliant Bank	NILAI	Conventional Bank	NILAI
BSI	353.624.124	Bank Mandiri	2.174.219.449
Muamalat	66.196.117	Bank Rakyat Indonesia	1.965.007.030
BPD Aceh	28.234.689	Bank Central Asia	1.408.107.010
BTPS	21.412.505	Bank Negara Indonesia	1.086.663.986
BJB Syariah	12.333.448	Bank Tabungan Negara	438.749.736
PNBS	15.541.074	CIMB Niaga	334.369.233
Mega Syariah	14.775.279	Bank Permata	257.444.147
NTB Syariah	14.085.657	NISP OCBC	249.757.139
BCA Syariah	13.367.468	Bank Panin	222.010.050
Bukopin Syariah	7.779.509	Bank Danamon Indonesia	221.304.532
Total	547.349.870		8.357.632.312
Population%	550.921.000		11.234.971.000
%	99,35%	%	74,39%

The period used is 2018 Quarter I to 2023 Quarter III (Quarterly) so the total period is 23 periods with 20 banks or panel data totaling 460 observation points.

Inferential Statistics Analysis of Panel Data Regression

The author performs panel data regression analysis with 5 (five) dependent variables which are measures of banking stability and performance as well as 4 (four) independent variables and 5 (five) control variables which are bank specific variables.

Formula:

Y *= c + PDB + Inflasi + Kurs + BI Rate + Covid + (Variabel Kontrol) ** + e

Notes:

* Z-Score, NPL, ROA, ROE dan NIM.

** Size (SIZE), Liquidity (LIQ), Diversification (DIV), Capacity (CAP), Asset Structure (STR).

In conducting research, the researcher first performs several tests to determine the best model. The tests include the Chow Test, the Hausman Test, and the Breusch Pagan Lagrange Multiplier (BP-LM) Test. If the model passes two tests, then there is no need for a third test. The Chow Test is used to decide between the Fixed Effect Model and the Common Effect Model, while the Hausman Test is used to choose between the Fixed Effect Model and the Random Effect Model. Finally, the BP-LM test is conducted to determine the best model between the Random Effect Model and the Common Effect Model.

Table 3.9. Summary of Panel Data Tests

Dependent	Test	Prob. Value	Hipotesis	Result	Summary
Z-Score	Uji Chow	0,0000	Tolak H_0	*Fixed Effect*	*Random Effect*
	Uji Hausman	0.0894	Terima H_0	*Random Effect*	
NPL	Uji Chow	0,0000	Tolak H_0	*Fixed Effect*	*Fixed Effect*
	Uji Hausman	0.0001	Tolak H_0	*Fixed Effect*	
ROA	Uji Chow	0,0000	Tolak H_0	*Fixed Effect*	*Fixed Effect*
	Uji Hausman	0,0000	Tolak H_0	*Fixed Effect*	
ROE	Uji Chow	0,0000	Tolak H_0	*Fixed Effect*	*Fixed Effect*
	Uji Hausman	0,0002	Tolak H_0	*Fixed Effect*	
NIM	Uji Chow	0,0000	Tolak H_0	*Fixed Effect*	*Fixed Effect*
	Uji Hausman	0.0237	Tolak H_0	*Fixed Effect*	

Classic Linier Regression Assumption

After selecting the best model for the research, the researchers conducted tests to confirm that the research model had a BLUE (Best, Linear, and Unbiased Estimator) estimation value. Three types of tests were used: autocorrelation test, multicollinearity test, and heteroscedasticity test. Here are the details:

Dependent	Value D-W	Hypothesis	Result

Z-Score	0.995697	Reject H_0	There is Autocorrelation
NPL	0.780212	Reject H_0	There is Autocorrelation
ROA	1.200626	Reject H_0	There is Autocorrelation
ROE	1.119845	Reject H_0	There is Autocorrelation
NIM	0.233820	Reject H_0	There is Autocorrelation

Autocorrelation

The autocorrelation test is conducted to determine if there is a relationship between the model's residual errors in a specific period and the preceding period (lag). If there is a high relationship between the residuals, it indicates an autocorrelation issue in the research model. A good model is one where there is no relationship between residuals from different periods, indicating a model without autocorrelation.

After finding autocorrelation in the model, it was necessary to transform the data before proceeding with panel data regression. The author then conducted the Cochrane-Orcutt method, which is used in regression analysis to address autocorrelation in time series or panel data. This method was initially developed by T.C. Cochrane and G.E. Orcutt in 1949. It offers a more robust approach for analyzing time series data that shows autocorrelation, allowing for more accurate parameter estimates in regression analysis. The results of the autocorrelation test following transformation using the Cochrane-Orcutt method are as follows:

Table 3.11. Autocorrelation Test After Cochrane-Orcutt Transformation

Dependent	Value D-W	Hypothesis	Result
Z-Score	1.993	Accept H_0	There is no Autocorrelation
NPL	1.957	Accept H_0	There is no Autocorrelation
ROA	2.057	Accept H_0	There is no Autocorrelation
ROE	2.034	Accept H_0	There is no Autocorrelation
NIM	2.100	Accept H_0	There is no Autocorrelation

Heteroscedasticity

This study aimed to determine if the residual value remained consistent throughout the research. A constant error variance (residual) suggests that the model fulfills the homoscedasticity assumption and can satisfy the BLUE assumption. One method for testing heteroscedasticity is the Glejser test. This test was conducted to assess whether the residual value remained constant throughout the research. A consistent error variance (residual) indicates that the

model meets the homoscedasticity assumption and can satisfy the assumptions. The Glejser test is one way to test for heteroscedasticity.

Table 3.13. Heteroskedasticity test

Independent	Prob. Value	Hipotesis	Result
PDB	0.7728	Accept H_0	There is no heteroskedasticity
BI_RATE	0.5994	Accept H_0	There is no heteroskedasticity
LN_KURS	0.0719	Accept H_0	There is no heteroskedasticity
INFLASI	0.8577	Accept H_0	There is no heteroskedasticity
CAP	0.0650	Accept H_0	There is no heteroskedasticity
DIV	0.1124	Accept H_0	There is no heteroskedasticity
LIQ	0.3898	Accept H_0	There is no heteroskedasticity
SIZE	0.7115	Accept H_0	There is no heteroskedasticity
STR	0.1375	Accept H_0	There is no heteroskedasticity
COVID	0.3886	Accept H_0	There is no heteroskedasticity

Analysis and discussion of Panel Data Regression

After going through the method of determining the best model and testing classical assumptions. Next, a regression test was carried out using the selected model to analyze the influence of external factors due to the impact of COVID-19 on banking performance and stability.

Table 3.14. Model Specification

Dependent	Variabel Independen	Variabel Kontrol
Z-Score	PDB, BI Rate, Inflasi, Kurs, Covid	Size, Cap, Str, Div, Liq
ROE	PDB, BI Rate, Inflasi, Kurs, Covid	
ROA	PDB, BI Rate, Inflasi, Kurs, Covid	
ROE	PDB, BI Rate, Inflasi, Kurs, Covid	
NIM	PDB, BI Rate, Inflasi, Kurs, Covid	

Panel data regression was conducted on a sample of 20 banks in Indonesia, comprising 10 Conventional Banks and 10 Sharia Banks, over the period from 2018 to 2023 on a quarterly basis. The regression results display the impact of external factors before and during the Covid-19 pandemic on banking

stability and performance. These results are summarized in Table 3.13. using EViews.

Table 3.13. Data panel regression result

Description	Z-SCORE	NPL_NPF	ROA	ROE	NIM
C	-9.5123***	-0.0086	-0.1636**	-1.0831**	0.0964**
PDB	4.4274*	0.0254***	0.0284**	0.0982***	0.0299**
Inflation	1.3567	0.0203	0.0363	0.3092***	0.0159
BI Rate	2,7603*	-0.1740*	0.0011	0.3238	0.0828***
Exchange Rate	0.6790	0.0256*	0.0011	0.0449	0.0095
CAP	4.2664	0.0636**	0.0378	0.0320	-0.0592
DIV	-0.1033	-0.0002	0.0006	0.0030	0.0001
LIQ	0.1364	-0.0151	0.0139	0.0657	0.0017
SIZE	0.7578*	-0.0038	0,0106**	0.0822**	-0.0215**
STR	0.7797	-0.0009	0,0229	0.1154	-0.0037
Covid	0.1012	-0.0003	-0,0012**	-0.006**	0.0007
Total Panel	460	460	460	460	460
Total Bank	20	20	20	20	20
Adjusted R^2	0,1120	0,5775	0,7452	0,5562	0.8914
Prob F-Statistic	0.0000	0.0000	0.0000	0.0000	0.0000

Source: Processed by Author.
Note: Probability t-statistics:
*Significant α = 1%
** Significant α = 5%
*** Significant α = 10%

The five models produced have a Prob F-Statistic of 0.0000, indicating that the simultaneous influence of predictor variables on the response variable is statistically significant. The R-squared value for the Z-Score is 0.1120, meaning the independent variable can explain the dependent variable in the form of a Z-Score of 11.20%. The R-squared value for NPL is 0.5775, indicating that the independent variable can explain the dependent variable in the form of Net Performance Loans of 57.75%. Meanwhile, the R-squared value for ROA is 0.7452, showing that the independent variable can explain the dependent variable

in the form of Return on Assets of 74.52%. Furthermore, the R-squared value for ROE is 0.5562, indicating that the independent variable can explain the dependent variable in the form of Return on Equity of 55.62%. The R-squared value for NIM is 0.8914, showing that the independent variable can explain the dependent variable in the form of Net Interest Margin of 89.14%. By comparing previous research, specifically Shabir et al. (2023), it is known that the research model has a value in the range of 4% - 65% with all models using Fixed Effect.

Influence Analysis of External Factors on Banking Stability

In Table 3.1.3, In general, researchers found a significant influence of Economic Growth and the BI Rate on the Z-Score (bankruptcy rate) at the 1% level. The influence of the GDP and BI Rate values on the Z-Score shows a positive direction, which means that an increase in GDP and the BI Rate will have a positive impact on an increasingly stable banking world. GDP has a positive impact on the Z-Score and a negative impact on NPL (Shabir et al, 2023). In theory, economic growth will encourage large, medium, and small industries to be productive and generate income so that the role of banks as intermediary institutions will continue, and this will contribute to the low potential for banking bankruptcy (Z-Score).

Meanwhile, inflation, exchange rates, and COVID do not have a significant influence or impact on the Z-Score (bankruptcy rate). According to several previous studies, author explains that in theory, inflation is a macroeconomic condition resulting from continuous price increases, this does not directly affect banking stability but depends on the policies to be taken by the central bank and government. The exchange rate does not have a direct impact on Z-Score banking stability. (Lapteacru, 2016). The exchange rate affects the Z-Score depending on the central bank's policy. (Luiugi Bocola et al., 2016) COVID-19 does not have a significant impact on the Z-Score in banking in Indonesia (Widarjono et al., 2023). This was also found in studies by Alfiyan et al. (2023) who said that the Z-Score of Sharia banking was relatively stable during COVID-19.

Furthermore, table 3.13 also shows that the BI Rate, Exchange Rate, and Economic Growth indicators have a significant effect on the Non-Performing Loan indicator at the 1%, 1%, and 10% levels. The influence of GDP and BI Rate values on NPL shows a negative direction, which means that an increase in GDP and BI Rate will have an impact on reducing the level of banking bad loans. In accordance with previous studies, GDP has a positive impact on the Z-Score

and a negative impact on NPL (Shabir et al, 2023). Economic growth will increase people's income or purchasing power so that the potential for bad credit (NPL) in banks will decrease. NPF also had a negative impact on the stability of Sharia banking during the Covid-19 period. (widarjono et al., 2023).

Meanwhile, the impact of positively correlated exchange rates means that every increase in the exchange rate (depreciation of the rupiah) will increase the risk of NPLs. When compared with a previous study by Sinaga (2020), it was found that the exchange rate has a significant influence on the NPL of commercial customers. This happens to customers whose businesses are related to exports/imports or depend on goods from abroad. The influence of the BI Rate on banking NPLs can vary depending on various factors, including economic conditions, monetary policy, and banking risk management. In the context of NPL/F, an increase in the BI Rate increases loan costs which have an impact on bank operational costs and the potential for customer default, but this also increases interest income so that if banks can maintain interest income levels above operational costs, this has a positive impact on banks. As a comparison to the research results, previous studies found that the BI Rate will influence banks in determining interest structures and policies in channeling financing. (Banerjee and Paul, 2022) Low interest rate policies will have a positive effect on bank profitability (Borio et al., 2015) while high interest rate policies pose a risk to NPLs (Ogundipe et al., 2020). However, the increase in fund distribution does not directly have an impact on increasing bank NPLs, many other factors influence this, such as banking risk management. (Agustine et al., 2013)

The research results show that an increase in the BI Rate has an impact on improving NPL/F in a limited amount, this considers the limitations of the data sample taken, namely in 2018-2023 where the BI Rate is maintained at a low level. To understand this phenomenon, the authors compared it with a study by Michail et al. (2021) which shows that central bank interest rate policies have a limited impact on NPLs. Banks have risk mitigation mechanisms in response to central bank policies and ways to maintain their debtors and not immediately increase their credit interest rates which in turn will burden their customers. In certain cases, banks will tend to reduce financing activities and carry out credit restructuring policies rather than executing customer collateral. In Indonesia, the BI Rate tends to have a significant negative relationship with NPL (Dwihandayani, 2017). In a case study in Tanzania, the central bank's policy interest rate does not have a significant relationship to NPL. (Dickson Pastory, 2020)

Inflation and COVID did not have a significant influence or impact on banking NPLs in the 2018-2023 period. In theory, inflation is a macroeconomic condition resulting from continuous price increases. This does not directly affect banking stability but depends on the policies that will be taken by the central bank and government. Inflation and Covid did not have a significant influence or impact in the 2018-2023 period. The author compares these findings with a previous study by Fitriana (2023) which found that during COVID-19, NPLs did not affect banking performance. Macroeconomic indicators have an impact on NPLs in 7 Southeast Asian countries during the pandemic compared to bank-specific variables, but this depends on the policies taken by policymakers, regulators, banks, and the government (Kok Loang et al., 2022).

In Indonesia, banks have been authorized to restructure credit and financing and defer debt payments for customers impacted by COVID-19. This measure hides the immediate impact on non-performing loans (NPL) during the restructuring period. A press release from the Financial Services Authority in November 2022 confirmed that the policy for credit and financing restructuring due to the pandemic will remain in effect until March 2023, suggesting a potential increase in NPL in the second and third quarters of 2023.

Analysis using the Z-Score model and additional robustness testing models (NPL/F) revealed that external factors significantly affected banking stability during the Covid-19 pandemic. Specifically, economic growth, the BI Rate, and the Exchange Rate were found to have a substantial impact, whereas Inflation and the Covid Dummy were deemed to have an insignificant influence.

Influence Analysis of External Factors on Banking Performance

In Table 3.1.3, researchers discovered, in general, a significant influence between economic growth and Covid-19 conditions on banking performance in Indonesia. Economic growth and COVID-19 have a significant effect at the 5% level on the ROA indicator. The influence of GDP on ROA shows a positive direction, which means that an increase in GDP will have a positive impact on banking performance, in other words, the better the economic conditions, the higher the potential for banks to improve their performance. These results are like the research of Shabir et al. (2023). GDP reflects the overall economic activity within a country. When the economy grows, banking activity usually increases as well.

This can increase the amount of credit provided by banks, which in turn can increase interest income and net profit, as well as increase ROA. Candida

Fereira (2013) found that economic growth positively influences banks' Return on Assets (ROA) based on a Granger causality estimation panel conducted in 27 European Union member countries. Next, the author will compare the results of testing the ROA model with the ROE and NIM models. From the test results in Table 3.1.3., it is found that the impact of external factors on the ROE model is significant for the GDP, Inflation, and COVID-19 indicators. Economic Growth has a significant effect on ROE at a significance level of 10%. Meanwhile, inflation and Covid-19 have a significant effect at the 10% and 5% levels.

The influence of GDP on ROE shows a positive direction, which means that an increase in GDP will have a positive impact on banking performance, in other words, the better the economic conditions, the higher the potential for banks to improve their performance. The effect of inflation on ROE shows a positive direction, which means that increasing inflation will have an impact on increasing banking profits. This can be explained because when inflation increases, it reflects increasing demand due to increasing people's income, which in turn increases people's savings and loans, which has an impact on bank profitability.

Meanwhile, the influence of COVID-19 on ROE shows a negative direction, which means that an increase in COVID-19 will have an impact on reducing banking profit levels. The influence of GDP on NIM shows a positive direction, which means that an increase in GDP will have a positive impact on banking performance, in other words, the better the economic conditions, the higher the potential for banks to improve their performance. Meanwhile, the influence of the BI Rate on NIM shows a negative direction, which means that an increase in the BI Rate will have an impact on increasing the banking profit spread. This spread increase is possible when banks quickly adjust credit interest rates but are slow to increase deposit or savings interest rates except for new customers or when there is a request from customers. These results are like the research of Shabir et al. (2023).

GDP reflects economic activity when the economy is developing which supports banking activity which will have an impact on increasing credit provided by banks, which in turn can increase interest income and net profit, as well as increase ROE. A study by Lestari and Aprilriani (2016) found that Economic Growth had a positive effect on ROE. Strong economic growth tends to fuel demand for credit from consumers and businesses. Banks will be able to provide more loans at favorable interest rates at the same time, increasing the amount of

interest income earned and increasing their NIM. A study by Dede Djuniardi (2021) found that GDP significantly influences NIM.

Inflation, foreign exchange rates, and Covid-19 did not have a significant influence or impact on banking NIM in the 2018-2023 period. The exchange rate only impacts banks with foreign exchange bank status and has routine export-import funding activities. A similar thing was found by Adnan et al. (2019) which confirms that central bank interest rates in Pakistan influence ROA and ROE indirectly, namely through credit/financing decisions. The central bank interest rate will influence the interbank money market (PUAB) interest rate. This PUAB interest rate will have a direct influence on banking, especially in determining funding and lending interest rates. (Verga and Vasilcovschi, 2019) Furthermore, the BI Rate also does not significantly influence NIM, this is because NIM does not directly influence the determination of banking NIM but goes through the PUAB route. The exchange rate has no direct relationship with determining NIM. NIM plays an important role in creating banking financial performance during the pandemic (Rizka and Nurhayati, 2022).

However, the author has not found a study that explains whether Covid-19 will have an impact on determining NIM even though in theory banks will adjust NIM to economic conditions and people's purchasing power and income. Based on analysis of the main model (ROA) and additional models for robustness testing (ROE and NIM), it can be concluded that external factors had a significant influence on banking performance during the Covid-19 pandemic. Individually, economic growth, inflation, and BI rate. Covid and the exchange rate do not have a significant influence. Based on the discussion above, H_3 states that external factors have a significant impact on the financial performance and stability of banking during the Covid-19 pandemic, which is deemed acceptable.

Analysis of the influence of bank type on banking stability and performance

The author re-ran the model to determine whether the type of bank, specifically Conventional Bank and Sharia Bank, can impact banking stability and performance. This was done by replacing the dummy variable "covid" with the dummy variable representing the type of bank. This analysis aims to address the hypothesis:

H_4= Bank type significantly influences the performance and stability of banking finance during the Covid-19 pandemic.

Tabel 3.14. Model Specification

Dependent	Independent	Control
Z-Score	PDB, BI Rate, Inflasi, Kurs, Jenis Bank	
ROE	PDB, BI Rate, Inflasi, Kurs, Jenis Bank	
ROA	PDB, BI Rate, Inflasi, Kurs, Jenis Bank	Size, Cap, Str, Div, Liq
ROE	PDB, BI Rate, Inflasi, Kurs, Jenis Bank	
NIM	PDB, BI Rate, Inflasi, Kurs, Jenis Bank	

Table 4.21 shows that the author will test 5 (five) models as before to obtain information on the influence of bank type on banking stability and performance.

Table 3.15. Model

Dependent	Test	Prob. Value	Hipotesis	Result	Summary
Z-Score	Chow	0,0000	Reject H_0	*Fixed Effect*	*Random Effect*
	Hausman	0.7000	Accept H_0	*Random Effect*	
NPL	Chow	0,0000	Tolak H_0	*Fixed Effect*	*Fixed Effect*
	Hausman	0.0000	Tolak H_0	*Fixed Effect*	
ROA	Chow	0,0000	Tolak H_0	*Fixed Effect*	*Fixed Effect*
	Hausman	0,0000	Tolak H_0	*Fixed Effect*	
ROE	Chow	0,0000	Tolak H_0	*Fixed Effect*	*Fixed Effect*
	Hausman	0,0000	Tolak H_0	*Fixed Effect*	
NIM	Chow	0,0000	Tolak H_0	*Fixed Effect*	*Fixed Effect*
	Hausman	0.0368	Tolak H_0	*Fixed Effect*	

After conducting statistical tests, it was determined that the Fixed Effect (FE) model is the best for measuring the impact of NPL, ROA, ROE, and NIM. However, since the main interest is to observe the impact of the dummy variable for bank type (conventional or sharia), which only appears in the Random Effect (RE) model, the results from the RE model were used for further analysis. It should be noted that the FE model cannot demonstrate the effect of bank type on the dependent variable due to collinearity issues with the fixed effect coefficients, as the dummy variable remains constant for each bank. Following the model determination, classical assumptions were tested to ensure that the

research model provides the Best, Linear and Unbiased Estimator (BLUE) estimation value. The researchers performed three types of tests: heteroscedasticity, multicollinearity, and autocorrelation. Further details are as follows:

Table 3.16. Heteroscedasticity Test

Independent	Prob. Value	Hypothesis	Result
PDB	0,286	Accept H_0	There is no heteroscedasticity
BI_RATE	0,200	Accept H_0	There is no heteroscedasticity
LN_KURS	0,151	Accept H_0	There is no heteroscedasticity
INFLASI	0,443	Accept H_0	There is no heteroscedasticity
CAP	0,510	Accept H_0	There is no heteroscedasticity
DIV	0,083	Accept H_0	There is no heteroscedasticity
LIQ	0,231	Accept H_0	There is no heteroscedasticity
SIZE	0,700	Accept H_0	There is no heteroscedasticity
STR	0,092	Accept H_0	There is no heteroscedasticity
Type of Bank	0,326	Accept H_0	There is no heteroscedasticity

*Heteroskedasticities is happened when Probabilities < 0,05.

Table 3.17. Multicollinearities Test

Variable	**Collinearity Statistics**		**Result***
	Tolerance	**VIF**	
Inflasi	0,439	2,278	There is no Multicollinearity
PDB	0,705	1,418	There is no Multicollinearity
BI Rate	0,523	1,912	There is no Multicollinearity
Ln Kurs	0,801	1,248	There is no Multicollinearity
Size	0,210	4,763	There is no Multicollinearity
Liq	0,207	4,873	There is no Multicollinearity
Cap	0,835	1,198	There is no Multicollinearity
Div	0,847	1,18	There is no Multicollinearity
Str	0,229	4,368	There is no Multicollinearity
Type of Bank	0,241	4,679	There is no Multicollinearity

*Multicollinearities is happened when VIF > 10 and Tolerance < 0,1.

Table 3.18. Autocorrelation Test After *Cochrane-Orcutt* Transformation

Dependent	D-W Value	Decision	Result
Z-Score	2.0081	Accept H_0	There is no autocorrelation

NPL	2.0937	Accept H_0	There is no autocorrelation
ROA	2,0990	Accept H_0	There is no autocorrelation
ROE	2.1091	Accept H_0	There is no autocorrelation
NIM	1.9129	Accept H_0	There is no autocorrelation

* D-W value should be among 1.8869 – 2.1131.

After performing the classical assumption test, a panel data statistical test was performed using the Random Effect model. The data was transformed using the Cochrane-Orcutt method for all dependent variables. This was done to assess the impact of bank type. Here are the results:

Table 3.19. Data panel regression Result

Description	Z-SCORE	NPL_NPF	ROA	ROE	NIM
Coefficient	0.5765	0.0006	0,0072*	0,0337*	-0,0055***
Adjusted R^2	0,1131	0,0834	0,1376	0,1308	0,0611
Prob F-Statistic	0.0000	0.0000	0.0000	0.0000	0.0000

Source: Processed by author. Information of Probability t-statistics:
*Significance $\alpha = 1\%$
** Significance $\alpha = 5\%$
** Significance $\alpha = 10\%$

In general, the five models produced have a Prob F-Statistic of 0.0000, indicating that the combined influence of predictor variables on the response variable is statistically significant. Additionally, when considering the individual Bank Type variable, it was discovered that Bank Type (Shariah or conventional) significantly impacts the ROA and ROE performance indicators with an alpha value of less than 1%, and NIM with an alpha value of less than 10%. Conclusion, the type of bank (Shariah or conventional) does not significantly affect the stability indicators but does impact the bank's performance. Therefore, we can conclude that Hypothesis 4, which suggests that the type of bank has a significant influence on banking stability and performance, is rejected.

Conclusion

Generally, there are significant differences between stability indicators (Z-Score and NPL) and performance indicators (ROA, ROE, and NIM) in conventional banking before and after the COVID-19 pandemic. Meanwhile, in Islamic banking, there are only differences in the stability of Non-Performing Loans. The ROA and NIM indicators in both conventional and Islamic banking

show a decrease after the pandemic. During the COVID-19 period, the Z-Score, NPL, and ROA of conventional banks experienced a decrease in performance. On the other hand, the NPL and ROE of Islamic banks improved. This is because some banks, such as BSI, Bank Muamalat, and PNBS, are suspected to have utilized the government's stimulus program, including credit restructuring and payment deferment for customers affected by the pandemic.

The ROE of BSI and Mega Syariah showed significant increases during the pandemic. BSI's performance improved after the 2020 merger, where Bank Syariah Mandiri, BNI Syariah, and BRI Syariah operated under one management, leading to better synergy, coordination, and profit targets. Bank Mega Syariah, post-pandemic, implemented an expansion strategy by integrating with the CT Corp ecosystem, which has more controlled risks compared to the general public. The bank also expanded by issuing Mega Syariah credit cards. The model chosen for panel data regression for ZScore is Random Effect, while NPL, ROA, ROE, and NIM are Fixed Effect.

All five models have a Prob F-Statistic of 0.0000, which means that the simultaneous influence of predictor variables on response variables is statistically significant. These models have relatively high adjusted coefficients of determination (AdjustedR2), ranging from 0.6772 to 0.9774 for the Fixed Effect models of NPL_NPF, ROA, ROE, and NIM. Meanwhile, the only Random Effect model (Z-Score) has a value of 0.2177. Overall, the results show that the COVID-19 pandemic has impacted the stability and performance of banks, although inflation and exchange rate variables do not significantly contribute to all models. The GDP variable has a significant influence on all models. Size is only one control variable which influence to all dependent variables. This result is the same result studied by Dewi (2020) that find about Firm size has a positive and significant effect toward profitability in banking sector in Indonesia. The type of bank only significantly affects performance indicators but has no impact on banking stability.

References

Adeyemi, Samson, Ogundipe., Abolade, Francis, Akintola., Samuel, Adebayo, Olaoye. (2020). Interest rates and loan performance of deposit money banks in nigeria.

Aditya, Banerjee., Samit, Paul. (2022). The Effect of Changes in the Policy Rates on Borrowing and Lending of Banks in India. India studies in business and economics, doi: 10.1007/978-981-16-7668-0_9

Adnan, Ahmad., Pir, Bilal., Ihtesham, Khan. (2019). The Resilience of Central Bank Interest Rate on the Association of FinancialLeverage and Firm Performance. doi: 10.34091/AJSS.12.1.11

Ahmad, Rafik. (2023). Analisis kinerja industri perbankan nasional pasca covid-19. Jurnal Lentera Akuntansi Politeknik LP3I Jakarta, doi: 10.34127/jrakt.v8i1.852

Aida, Mehrad., Mohammad, Hossein, Tahriri, Zangeneh. (2023). Coronavirus Disease (COVID-19) Pandemic and Global Economic Circumstance. The journal of social sciences research, doi: 10.24297/jssr. v19i.9384

Ajizah, S. D. N., & Widarjono, A (2023). Indonesia Islamic Banking Stability in The Shadow of Covid-19 Outbreak. *Jurnal Ekonomi Syariah Teori Dan Terapan*, *10*(1), 57–68. https://doi.org/10.20473/vol10iss20231pp57-68

Alexander, Kirchner. (2023). The new challenges of global banking and finance. European Journal of Finance, doi: 10.1080/1351847x.2023.2200145

Amir Salim, Fadila.,Purnamasari, Anggun., "Pengaruh Inflasi terhadap Pertumbuhan Ekonomi Indonesia".Jurnal Pemikiran dan Ekonomi Syariah Volume 7 Nomor 1 Agustus 2021

Anas, Farah. (2020). Determinants of Bank Performance: ROE, ROA Profitability Measures Amongst Islamic and Conventional Banks in the GCC. Social Science Research Network, doi: 10.2139/SSRN.3579883

Aning, Fitriana. (2023). The Effect of Non-Performing Loans (NPL) to the Bank Profitability During the Covid-19 Pandemic (Case Study of Buku III Bank in Indonesia). Riwayat, doi: 10.24815/jr.v6i2.31658

Annafsun, Nadzifah., Jaka, Sriyana. (2020). Analisis Pengaruh Inflasi, Kurs, Birate, PDB Dan Kinerja Internal Bank Terhadap Profitabilitas Pada Perbankan Syariah Dan Konvensional. 6(1):79-87. doi: 10.32528/JMBI.V6I1.3537

Arief Anshory Yusuf, "Mengukur Ongkos Ekonomi 'Sesungguhnya' Dari Pandemi Covid-19." SDG's Center Universitas Padjajaran, No. 1 (2020)

Augustine, Addo., A., Seyram. (2013). Central bank's policy rate on the cost of borrowing from some selected commercial banks in Ghana.

Bank For International Settlement (2021) "Covid-19 accelerated the digitalization of payments"

Boris, Begović. (2022). The Global Economic Effects of the Covid-19 Pandemic: A Bird's-Eye View. Anali Pravnog fakulteta u Beogradu, doi: 10.51204/anali_pfbu_22402a

Cakan, E., Ertac, S., Gokmen, G., & Gumus (2021), "The Economic Impact of COVID-19 Lockdowns: An Evidence from Earnings Calls"

Chohan, W. Usman (2022), Book of Pandemic and Public Value Management. Routledge.

Claudio, Borio., Leonardo, Gambacorta., Boris, Hofmann. (2015). The influence of monetary policy on bank profitability. Research Papers in Economics,

Daniela, Harangus. (2012). Banking performances in the context of the international financial crisis.

Dwinanda, I. Z., & Sulistyowati, C. (2021). The Effect of Credit Risk and Liquidity Risk on Bank Stability. *JIET (Jurnal Ilmu Ekonomi Terapan)*, *6*(2), 255–266. https://doi.org/10.20473/jiet.v6i2.31144

Dung, Cong, Tran., M., Kabir, Hassan., Ahmed, W., Alam., Nam, Dau. (2022). Banks' financial soundness during the COVID-19 pandemic. Journal of Economics and Finance, 46(4):713-735. doi: 10.1007/s12197-022-09591-x

Deasy Dwihandayani (2017) Analisis Kinerja Non-Performing Loan (NPL) Perbankan Di Indonesia Dan Faktor-Faktor Yang Mempengaruhi NPL

Dede Djuniardi (2021) Determinan Net Interest Margin Pada Perbankan di Indonesia. Jurnal Ekonomi Akuntansi Dan Manajemen Issn 1358-0394 Vol.1 Issue 2

Dewi, N. G. (2020). Pengaruh Risiko Likuiditas dan Ukuran Perusahaan Terhadap Profitabilitas Perbankan di Bursa Efek Indonesia. *JIFA (Journal of Islamic Finance and Accounting)*, *3*(1). https://doi.org/10.22515/jifa.v3i1.2153

Dickson, Pastory. (2020). The Determinants of Non-performing Loans in Commercial Banks. doi: 10.1007/978-3-030-68836-3_35

Dinda, Khoirotunnisa., Zulfikar, Zulfikar. (2022). Impact of The Covid-19 Outbreak on The Stability of Sharia Banking Financial Performance. International Journal of Finance & Banking Studies, doi: 10.20525/ijfbs.v11i3.2107

Hamzah, A. (2018). Pengaruh Faktor Makro Ekonomi Terhadap Pembiayaan Bermasalah (Penelitian Pada Bank Umum Syariah di Indonesia Tahun 2010-2017). *JIFA (Journal of Islamic Finance and Accounting)*, *1*(2), 73–90. https://doi.org/10.22515/jifa.v1i2. 1416

Henny Setyo Lestari, Giya Aprilriani (2016) Pengaruh Faktor Internal Dan Eksternal Bank Terhadap Kinerja Keuangan Pada Bank Umum Di Indonesia

Laeven, Ross Levine (2009) Bank governance, regulation and risk taking. Journal of Financial Economics, Volume 93, Issue 2.

Luc Laeven and Lev Ratnovski and Hui Tong. (2016) Bank size, capital, and systemic risk: Some international evidence. Journal of Banking & Finance Volume 69 page S25-S34.

Nektarios, A., Michail., Christos, S., Savva., Demetris, Koursaros. (2021). Are central banks to blame? Monetary policy and bank lending behavior. Bulletin of Economic Research, 73(4):762-779. doi: 10.1111/BOER.12273

Nina, SiniÈ›Ã®n., Adela, Socol. (2020). Determinants of Banking Profitability through ROA and ROE: A Panel Data Approach. Ovidius University Annals: Economic Sciences Series,

Elena, Maklakova., Dzhanatul, Shahebaz. (2022). Covid-19 pandemic and global economy. doi: 10.34220/my2021_170-172

Elnahass, Marwa & Trinh, Vu & Li, Teng. (2021). Global Banking Stability in the Shadow of COVID-19 Outbreak. Journal of International Financial Markets Institutions and Money.

Francis, Antwi., Mercy, Kwakye. (2022). Modelling the effect of bank performance on financial stability. International Journal of Research In Business and Social Science, doi: 10.20525/ijrbs.v11i7.2058

Friawan, Deni dan Kurnia Yazid, Ega (2021), "Pandemi Covid-19 dan Ancaman Inflasi di Indonesia". Centre for Strategic and International Studies

Gibson E. Conceptualizing Financial Stability during Financial Crises: Liquidity and Systemic Risk. In: *A Regulatory Design for Financial Stability in Hong Kong*. Cambridge University Press; 2022:93-118.

Goga, Gelitashvili, Goga, Gelitashvili., Ana, Bokuchava, Ana, Bokuchava., Gocha, Abutidze, Gocha, Abutidze., Medea, Chelidze, Medea, Chelidze. (2022). Stability of the banking system as an important factor of economic security. Ekonomika, doi: 10.36962/ecs105/4-5/2022-110

Gönül Çolak, Özde Öztekin (2021), The impact of COVID-19 pandemic on bank lending around the world. Journal of Banking & Finance, Volume 133.

Haryanto. (2020). Dampak Covid-19 terhadap Pergerakan Nilai Tukar Rupiah dan Indeks Harga Saham Gabungan (IHSG). *Jurnal Perencanaan Pembangunan: The Indonesian Journal of Development Planning*, *4*(2), 151–165.

Hilarius, Bambang, Winarko., Julius, Caesare, Wahono., Yuniningsih, Yuniningsih., Sri, Tunggul, Pannindriya. (2021). How Do Inflation Rate, BI Rate, and Balance of Trade Directly Affect IDR to USD Exchange Rate and Indirectly Affect IDX Composite Index in Initial Stage of Covid-19 Outbreak?

Nur Hidayah, Ainun Zamilah, Sofyan Rizal, Jaharuddin Jaharuddin Hidayah (2021), "The Resilience of Sharia and Conventional Banks in Indonesia during the Covid-19 Pandemic Crisis"

International Monetary Fund (2020), *Global Financial Stability Report*.

Ion, Lapteacru. (2016). On the consistency of the Z-score to measure the bank risk. Research Papers in Economics,

Komite Nasional Ekonomi dan Keuangan Syariah (2021),"Pengantar Ekonomi Islam".

Laeven, Luc dan Levine, Ross. (2008). "Bank Governance, Regulation and Risk Taking". Journal of Financial Economics.

LI, Yu-qiang,, ZHANG, Wei-jiang,, HUANG, Yu,, LI, Lin,, LIU, Ai-hua. (2022). The Impact of the COVID-19 Pandemic on Global Economic Growth: An Analytical Study. doi: 10.1109/icaiot57170.2022.10121845

Luigi, Bocola., Javier, Bianchi., Fabrizio, Perri., Manuel, Amador. (2016). Sustainable Exchange Rates. Research Papers in Economics,

Joseph, E., Gagnon., Steven, B., Kamin. John, W., Kearns. (2023). The impact of the COVID-19 pandemic on global GDP growth. Journal of The Japanese and International Economies, doi: 10.1016/j.jjie.2023.101258

Marta, Paduszyńska., M., Lesiak. (2022). Analysis of banking sector stability using the taxonomic measure of development. Ekonomia i Prawo. doi: 10.12775/eip.2022.040

Mohammad, Zoynul, Abedin., Mahmudul, Hasan, Moon., M., Kabir, Hassan., Petr, Hájek. (2021). Deep learning-based exchange rate prediction during the COVID-19 pandemic. Annals of Operations Research, doi: 10.1007/S10479-021-04420-6

Moh, Alfiyan., Rofiul, Wahyudi., Maimunah, Maimunah., Riduwan, Riduwan. (2023). Financial stability in Indonesian Islamic banking using Z-Score: Before and during Covid-19. al-Uqûd : journal of islamic economics, doi: 10.26740/aluqud.v7n1.p17-32

Moh, Alfiyan., Rofiul, Wahyudi., Maimunah, Maimunah., Riduwan, Riduwan. (2023). Financial stability in Indonesian Islamic banking using Z-Score: Before and during Covid-19. al-Uqûd: journal of islamic economics, 7(1):17-32. doi: 10.26740/aluqud.v7n1.p17-32

Mohsin Shabir, Ping Jiang, Wenhao Wang, Özcan Işık, COVID-19 Pandemic Impact On Banking Sector: A Cross-Country Analysis, Journal Of Multinational Financial Management, Volume 67, 2023.

Muhammad, Fadlillah, Fauzukhaq., Devita, Sari., Suhenda, Wiranata. (2021). Pengaruh inflasi, bi rate, kurs, car dan fdr terhadap non performing financing bank syariah mandiri. 28(2):129-140. doi: 10.25105/ME.V28I2.7338

Mulyani, Sri (2020), https://keuangannews.id/sri-mulyani-bank-syariah-relatif-lebih-stabil-dari-konvensional/

Murat, Donduran. (2023). Bank Stability and Systemic Risk Measurement. International Journal of Finance & Banking Studies, doi: 10.20525/ijfbs.v12i1.2319

Ooi, Kok, Loang., Zamri, bin, Ahmad., R, V, Naveenan. (2022). Non-Performing Loans, Macroeconomic and Bank-specific Variables in Southeast Asia during COVID-19 Pandemic. The Singapore Economic Review, doi: 10.1142/s0217590822500679

Otoritas Jasa Keuangan Institute (2021), "Tantangan Intermediasi Perbankan di Era Pandemi".

Prasmuko, Andry dan Fajar Anugrah, Doni (2010), "Dampak Krisis Keuangan Global Terhadap perekonomian". Buletin Ekonomi dan Moneter Bank Indonesia

Priyadi, Angga; Akbar Susamto, Akhmad dan Purwoto, Hengki (2021), "Dampak Covid-19 terhadap tingkat inflasi di Indonesia". Universitas Gadjah Mada

Putra, Pamungkas., Taufiq, Arifin., Irwan, Trinugroho., Evan, Lau., Bruno, S., Sergi. (2023). COVID-19, stability and regulation: evidence from Indonesian banks. Studies in Economics and Finance, doi: 10.1108/sef-12-2022-0569

Rachita, Gulati. (2023). Beyond the Z-score: A novel measure of bank stability for effective policymaking. Journal of Public Affairs, doi: 10.1002/pa.2866

Rizka, Aufa, Tiana., Nurhayati. (2022). Pengaruh NPL, LDR, NIM terhadap Profitabilitas di Masa Pandemi Covid-19. doi: 10.29313/bcsa.v2i2.2796Saule, Serikbayeva., Aidos, Akpanov., O., Kogut. (2023). Financial stability in conditions of economic turbulence. Л.Н. Гумилев атындағы ЕҰУ хабаршысының экономика сериясы, doi: 10.32523/2789-4320-2023-2-197-209

Rustam, Hanafi., Abdul, Rohman., Sutapa, Sutapa. (2022). Islamic Bank Resilience: Financial and Sharia Performance During Covid-19 Pandemic in Indonesia. Muqtasid: Jurnal Ekonomi dan Perbankan Syariah, doi: 10.18326/muqtasid.v13i1.18-30

Shabir, Mohsin;Jiang, Ping;Wang, Wenhao, Ozcan, Isik (2023), "Covid-19 Pandemic Impact on Banking Sector: A Cross Country Analysis". Journal of Multinational Financial Management.

Shahzad, Ijaz., Arshad, Hassan., Amine, Tarazi., Ahmad, Fraz. (2020). Linking bank competition, financial stability, and economic growth. Journal of Business Economics and Management, doi: 10.3846/JBEM.2020.11761

Sunit, Mistry., Abdiaziz, Omar, Hassan., Frimpong, Atta, Junior, Osei. (2023). Navigating Uncertainty: How Covid-19 is Shaping the Stock Market. European Journal of Business and Management Research, doi: 10.24018/ejbmr.2023.8.3.1896

Sayyed, Sadaqat, Hussain, Shah., Ştefan, Cristian, Gherghina., Rui, Miguel, Dantas., Saliha, Rafaqat., Anabela, Batista, Correia., Mário, Nuno, Mata. (2023). The Impact of COVID-19 Pandemic on Islamic and Conventional Banks' Profitability. Economies, doi: 10.3390/economies11040104

Syukri, Iska., Ifelda, Nengsih. (2022). Banking Performance iIndonesia Pandemic Times: Comparison Between Conventional Commercial Banks And Sharia Commercial Banks. doi: 10.4108/eai.11-10-2021.2319496

Evgeny N Smirnov (2023). Stability of the global financial system as a factor in the post-crisis recovery of the world economy. RUDN Journal of Economics, doi: 10.22363/2313-2329-2023-31-2-282-298

Sudarsono, Heri (2009), Dampak Krisis Keuangan Global Terhadap Perbankan di Indonesia: Perbandingan antara Bank Konvensional dan Bank Syariah. La_Riba Jurnal Ekonomi Islam Volume III No. 1 Juli 2009.

Undang–Undang Republik Indonesia Nomor 4 Tahun 2023 Tentang Pengembangan dan Penguatan Sektor Keuangan

Varvara, Isyuk. (2013). The role of the banking sector performance in the crisis of 2007.

Violeta Ketaren, Eka; Mulyo Haryanto, Antonius (2020),"Pengaruh Kinerja Keuangan Terhadap Stabilitas Perbankan yang Terdaftar di Bursa efek Jakarta". Diponegoro *Journal of Management*.

Website resmi Bank Indonesia (2023). www.bi.go.id

Website remi Otoritas Jasa Keuangan (2023). www.ojk.go.id

Winifred, Huang., Philip, Molyneux., Steven, Ongena., Ru, Xie. (2023). The new challenges of global banking and finance. European Journal of Finance, doi: 10.1080/ 1351847X.2023.2200145