Contents list available at: https://journal.unesa.ac.id
al-Uqud: Journal of Islamic Economics
Journal homepage: https://journal.unesa.ac.id/index.php/jie

Financial stability in Indonesian Islamic banking using Z-Score: Before and during Covid-19

Moh. Alfiyan Lu'lu Firdaus[1], Rofiul Wahyudi[2]*, Maimunah Binti Ali[3], Riduwan[4]

[1,2,4]Islamic Banking Department, Faculty of Islamic Studies, Universitas Ahmad Dahlan, Indonesia.
[3]Fakulti Pengurusan Teknologi dan Perniagaan, Department Jabatan Pengurusan Perniagaan, Universiti Tun Hussein Onn Malaysia, Malaysia.

Article Info

Paper type:
Research paper

Keywords:
Covid-19; Islamic bank; Financial stability; Z-Score

Article history:
Received: 04 August 2022
Revised: 06 November 2022
Accepted: 20 November 2022
Available online: 01 January 2023

Abstract

This study aims to analyze the level of comparison of the Islamic bank's financial stability before and during the Covid-19 pandemic. This study uses a paired T-test by taking samples of 13 Islamic Commercial Banks that publish financial reports regularly on the website of OJK in the quarter I 2019 – quarter IV 2020. The results explain that Z-Score, BOPO, NPF, HHI, GDP and Inflation have no differences in the average level before the pandemic compared to during the Covid-19 pandemic. Then FDR, Bank Size and BI Rate have differences in the average level before the pandemic compared to during the Covid-19 pandemic. The results of the comparative analysis of the financial stability of Islamic banking before the Covid-19 pandemic compared to during the Covid-19 pandemic through the Z-Score analytical explained that Islamic banks were more stable before the pandemic but still had good stability during the Covid-19 pandemic.

*Corresponding author: rofiul.wahyudi@pbs.uad.ac.id
Please cite this article in APA style as:
Alfiyan, M., Wahyudi, R., Maimunah, M. B. A., & Riduwan, R. (2023). Financial stability in Indonesian Islamic banking using Z-Score: Before and during Covid-19. *Al-Uqud: Journal of Islamic Economics, 7*(1), 1–16. https://doi.org/10.26740/aluqud.v7n1.p17-32

Introduction

The development and growth of Indonesia's economy have passed since the 2008 crisis affected many sectors (Sugema, 2012). At the opening of 2020, a coronavirus epidemic knocked the world and caused shocks in many sectors, not only in the health unit but in almost all units and is predicted to last for quite a long time (Djalante et al., 2020).

Islamic banking has historically gone through various crises in 2008 and proved its resilience in the ongoing world crisis. In the first semester of 2019, national financial stability was swayed again by continuing global uncertainty triggered by the trade competition between the two superpower countries, the United States of America and the People's Republic of China.

The activities between the two superpower countries affected the Islamic banking sector, which slowed down along with the decline in real sector financing (OJK, 2020).

The resilience of Islamic banking was tested when there was a shock to global economic stability because of the Covid-19 pandemic. It occurred in all sectors, including the Islamic banking sector, which also received sap from the pandemic. The dynamics of the Indonesian economy are also inseparable from the effects that have arisen because of the Covid-19 pandemic. This sector has also affected the financial services sector, both the Islamic financial industry (Bank Indonesia 2020b; Wahyudi, 2020). This can be seen in the following figure1:

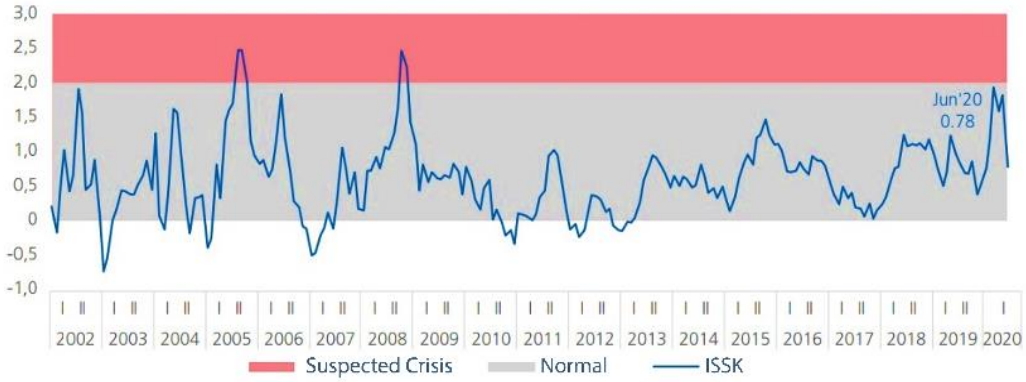

Figure 1. Financial System Stability Index (ISSK)

Figure 1 of the ISSK graph shows an overview of the Financial System Stability Index entering the beginning of 2020 under pressure since the world economic condition was hit by the Covid-19 pandemic crisis but could still survive in the normal zone during the first semester of 2020. The role of the government, financial authorities and financial institutions was an influential and significant impact on the process of financial system stability to avoid the possibility of more severe risks. Accordingly, Maintaining Financial System Stability (SSK) is a valuable effort to avoid massive losses and become a sustainable indicator (Bank Indonesia, 2020b).

Entering the Covid-19 pandemic, announced by the World Health Organization (WHO) on March 11, 2020, economic stability was in shock because many activities could have been carried out in person or face-to-face before the pandemic. However, since the pandemic occurred, activities must be limited and working from home or virtual even must be eliminated. The incident that occurred at the opening of the Covid-19 pandemic slowed global economic growth. Islamic banking experienced a slowdown in the financing sector because people had difficulty finding a livelihood, affecting the collectability of financing. Even though it was smooth, all parties must still expect this (Ningsih & Mahfudz, 2020).

Burhanuddin & Abdi (2020) stated that the pandemic's consequences affected the economy. Indeed the economy was the sector most affected by the first-time pandemic. However, from the affected economy, it was possible to get projections of an economic crisis that could occur if stable finances were not kept well-coordinated.

The success or failure of the financial system is caused by how financial institutions work, especially banking financial institutions. Banking financial institutions dominate the Indonesian financial system, which plays an essential role in influencing financial system stability. Banking financial institutions function as intermediaries between fundholders and fund administrators (Mankiw, 2018). Otoritas Jasa Keuangan (2015) issued that if the financial system is unstable and does not run well. It will affect slowing the pace of economic growth and the amount of cost allocation needed as a rescue action. It can also make the economy vulnerable to the economic turmoil that occurs.

The banking sector plays an essential role in the country's economy. The banks' role is to collect funds and channel public funds to fund managers (Soemitra, 2016) and to support national development goals with economic growth, increase equity in development and national stability. The level of stability of the banking sector contributes an essential indicator in the growth of the Gross Domestic Product, and the government may use this to determine monetary policy (Monnin & Jokipii, 2010).

Islamic banking stability becomes essential because banking is an intermediary institution that functions as a recipient and distributor of both capital and wealth, so that wealth will not be concentrated in a few parties and remain productive. The covid-19 pandemic can slow growth even when an Islamic banking institution collapses. In the release of Financial Services Authority (OJK) Regulation Num. 11/POJK.03/2020, one of which discusses credit relaxation so that the interests of debtors and creditors remain protected (Bidari & Nurviana, 2020).

Research on the financial stability of Islamic banking has been carried out by many researchers before. Previous research has focused more on the comparison of the quality of stability in Islamic banks and conventional banks, such as the findings of Fatoni & Sidiq (2019), Heniwati (2019), Nahar et al. (2020). The previous studies explain how the empirical analysis of the financial stability of Islamic banking was examined from various angles of analysis. The financial stability of Islamic banking in several particular periods certainly experiences dynamics. The presence of the Covid-19 pandemic has made stakeholders more careful with every decision (Burhanuddin & Abdi, 2020).

This study compares Islamic bank financial stability before and during the Covid-19 pandemic and the variables that determine it. The gap in this research compared to previous research is in the period selection used. This study uses the period before and during the Covid-19 pandemic, using secondary data reports per quarter of Islamic banking from the second quarter of 2019 to the fourth quarter of 2020 (Q2, Q3, Q4 2019 and Q1, Q2, Q3, Q4 2020). Furthermore, the objects used are 13 Islamic Commercial Banks.

This study aims to determine the level of financial stability of Islamic banking before and during the Covid-19 pandemic with Z-score analysis as an indicator (Bidari & Nurviana, 2020; Fatoni & Sidiq, 2019; Heniwati, 2019; Nahar, Faza & Azizurrohman 2020). Using the Z-score as an analytical indicator is used to measure financial stability. The function of the Z-score is to compare capital and returns with the risk of return to measure the solvency level of a bank. Through the Z-score, it can be seen how close the probability of bankruptcy of an Islamic bank is (World Bank, 2016). This finding contributes to the understanding of regulators and bank management as a signal of the impact of the crisis caused by the Covid-19 pandemic so that they can plan policies for financial system stability.

Literature Review

Islamic Bank

There are several definitions of Islamic banking, including those written in Law no. 21 of 2008 described Islamic banking as all matters relating to Islamic Banks & Sharia Business Units. This includes business activities, institutions, approaches and processes carried out in business activities.

According to Arifin (2006), Islamic banks apply Islamic, sharia and cultural principles in banking, financial transactions, and other businesses. The principles applied include prohibiting usury in all transactions; an operating business based on legitimate earnings and profits; distribute zakat.

The specifics of this case are also explained by Ismail (2011) that Islamic banks as intermediary institutions of the parties are banks whose operations are based on the guidance of Islamic law and do not use interest transactions with customers. The profit received by the Islamic bank or customer is based on the contract established between the parties the last time,

ISSN: 2548-3544 (online), 2549-0850 (print)
DOI: https://doi.org/10.26740/aluqud.v7n1.p17-32

and the contract terms are subject to and comply with Islamic law (Khan & Mirakhor, 1994; Ryandono & Wahyudi, 2018).

Financial Stability

The formal definition of financial stability does not yet exist; however, several definitions can be summed up into one. Otoritas Jasa Keuangan (2015) concludes that financial system stability is a stage of financial system instability that is included in the category of hampering and endangering economic activity. The meaning of financial system stability is understood by examining the factors that can trigger instability in the financial sector. These factors are structural and behavioural.

The definition of stability presented by the World Bank (2016) that definition of financial stability is the absence of parts or episodes that fail to function or a crisis in the entire system. It also includes the resilience of a financial system to pressures that occur. Schinasi (2005) explains that financial stability means no crisis. The stable criteria used include; First, there is a geographically efficient and sustainable allocation of capital resources in financial and other processes. Second, mitigate risk by calculating prices and allocating and managing financial risks. Third, being able to survive in the prominent roles when dealing with external turmoil or instability that has accumulated.

After conducting a study of various ratios, several ratios can be taken that are used as indicators of the financial stability of Islamic banks, including the following:

Z-Score

Z-Score is a proxy for bank stability established by the World Bank. Z-Score has an inverse relationship with the possibility of bankruptcy of a financial institution, the possibility of the value of assets less than debt (Nugroho & Qizam, 2014). The high number of Z-Scores shows a financial institution's low level of potential insolvency (World Bank, 2016). The Z-Score calculation is specified in the formula:

$$Z - score = \frac{ROA + CAR}{\sigma ROA}$$

Z-score	=	Bank stability index
ROA	=	the ROA (Return of Asset) of the research period as the projection of the bank's capability to get profits
CAR	=	CAR (Capital Adequacy Ratio), which banks set during the research period, got from the calculation of capital comparison through ATMR as an estimate of the quality of bank leverage.
σROA	=	ROA volatility is calculated as the standard deviation of ROA.

BI Rate

The BI-7 Day Reserve Repo Date (BI7DRR) is a policy interest rate issued by Bank Indonesia and then broadcast to the public as a reference in the operational targets of the Interbank Money Market (Bank Indonesia 2020). Rising interest rates trigger a rise in the level of financial instability. It is illustrated because the financing channelled by banks to debtors is disrupted due to debtors who have difficulty paying off because of greater interest, so the BI Rate influences bank stability (Sudarsono, 2018). BI Rate data used in this study is BI Rate per month, released by Badan Pusat Statistik (Central Statistics Agency).

Inflation

A tendency to increase the price of goods occurs during a period (Zulfiah & Susilowibowo, 2014). The impact of high inflation can reduce people's actual income because the price of goods is increasing, resulting in negative economic processes (Sudarsono, 2018). The inflation data used in this study is the BI Rate per month released YoY (Year on Year) by BPS (Central Statistics Agency). The conclusion is that the high rate of inflation can harm the stability of a bank.

Gross Domestic Product (GDP)

Gross Domestic Product is the value of products and services in the year produced. The value of GDP represents the level of productive output in a period (Mankiw, 2018; Wijaya, 1992). Real GDP is interpreted as a restriction representing the level of economic health so that the higher the value of wealth will increase financial stability (Heniwati, 2019). The GDP data used in this study is GDP per month, released by Badan Pusat Statistik (Central Statistics Agency).

Non-Performing Finance (NPF)

Asset assessment assesses the state of bank assets and proficiency in managing financing risk provided (Festiani, 2016). A standard asset approach is also used to measure the stability or health of Islamic banks. NPF is an estimate of the financing portfolio ratio, where if the ratio increases in value, the higher the risk of financing (Pravasanti, 2018) can affect the level of stability. (Festiani, 2016)(Festiani, 2016)(Festiani 2016)So that financing risk management can be used as an effort to reduce default risk. Bank Indonesia Circular (SEBI) Num. 9/24/DPBS released in 2007 noted that NPF is a ratio used to assess bank governance's ability to manage channelled financing. NPF calculations can be formulated by:

$$NPF = \frac{\text{Total Non} - \text{Performing Finance}}{\text{Total Financing Total}} \ 100\%$$

Operating Expenses of Operating Income (BOPO)

BOPO is a measure of the comparison between operating costs and income; more efficient operational management will improve the bank's stability (Nugroho & Anisa, 2018; Perdanasari, 2018). Islamic bank operations require high efficiency. Quality efficiency has a close relationship with stability. The higher efficiency level applied and run by the bank will reduce the bankruptcy risk. Schaeck & Cihák (2014) noted that high efficiency shows improved stability. BOPO is formulated by:

$$BOPO = \frac{\text{Total Operating Expenses}}{\text{Total Operating Income}} \ 100\%$$

Financing to Deposit Ratio (FDR)

FDR is the large-scale measure of liquidity allocated as financing compared with fulfilling obligations to third parties (Festiani, 2016; Yusuf & Wahyuni, 2017). It also becomes a comparative indicator of funds channelled by Islamic banks through financing with the ability of Islamic banks to fulfil short-term obligations (Yusuf & Wahyuni, 2017). The management of FDR as an indicator of liquidity should be done as accurately as possible because liquidity in Islamic banks funds from the community will be taken (Festiani, 2016). FDR will show the ability of Islamic banks to distribute funds that have been received. The better liquidity management, the better the FDR numbers (Wahyu, 2016). This also impacts the financial stability of Islamic banks. The formula measures FDR:

ISSN: 2548-3544 (online), 2549-0850 (print)
DOI: https://doi.org/10.26740/aluqud.v7n1.p17-32

$$FDR = \frac{\text{Total Finance}}{\text{Total Saving}} \text{s } 100\%$$

Bank Size

The size of the bank is one of the bank's proxies which influences its stability of the bank (Wahyudi et al., 2019), the larger the bank, the more stable the bank will be, and the size the bank illustrates the total assets of the bank (Abdullah, 2013). The small size of banks is classed as less able in the face of economic shocks that result in instability, while the large size of banks is classed as better able to survive in times of instability (Bhagat, Bolton, & Lu 2015; Heniwati, 2019; Laeven, Ratnovski & Tong, 2014).

Hirschman Herfindahl Index

Herfindahl Hirschman Index is an index that translates the concentration of competition in the market, especially in Islamic financial markets in one particular region (Berger, Klapper, & Turk-Ariss, 2009; Cihák & Hesse, 2007; Goetz, 2018; Schaeck & Cihák, 2014). The high Herfindahl Hirschman Index describes the high level of market concentration, and conversely, the more minor the Herfindahl Hirschman Index, the more the market concentration is considered competitive. The market competition index uses the point of view of financing and third-party funds. Hirschman's Herfindahl Index calculation can be done in the following formulas:

$$HHI = \sum_{i=1}^{n} S_i^2$$
$$= S_1^2 + S_2^2 + S_3^2 + dst$$

The Herfindahl Hirschman index (H) is divided into the following:
If H ≤ 0.01 (100), then it is very competitive
If H ≤ 0.15 (1500), then it is concentrated
If 0,15 (1500) ≥ H ≤ 0,25 (2500) then it is moderate concentration
If H ≥ 0,25 (2500), then it is the high concentration
(Liston-Heyes & Pilkington 2004; US Department of Justice and Federal Trade Commission 2010).

Hypothesis Development

In the early 21st century, since the crisis in 1998, research on the financial stability of Islamic banking has been increasing. This theme is a big concern because the banking sector is one of the focus of the financial and financial services sector (Festiani, 2016).

Research on the stability of Islamic banking compared to conventional banking has been conducted by Amalia (2018), Elsa & Utami (2015), and Hafidah, Salim, & Priyono (2020). This research stated that Islamic banking in Indonesia is more stable than conventional banking and does not seem different when viewed from the average NPF / L. Meanwhile, Variable-based financing, LAR, BOPO, NPF, Bank Size & GDP has an impact on the stability of Islamic banking, while BI Rate, GDP, BOPO, bank size & HHI impact the stability of conventional banks (Fatoni & Sidiq, 2019). Nugroho & Qizam (2014) found that bank stability looks two-sided, with internal and macroeconomic factors.

In the research of Lasty et al. (2019) regarding the determinants of the stability of Indonesian Islamic banks in 2013-2017 using 11 BUS data, it was found that the variables of competition, bank size and capital buffer had a significant impact on the stability of Islamic banks. Widarjono (2020) found that the variables that affect the stability of Indonesian Islamic banking are size, CAR and efficiency. Nugroho & Bararah's (2018) findings explain efficiency

as a proxy for BOPO; increasing BOPO can reduce ROA. While the findings of Nahar et al. (2020), which are external and internal factors on profitability, show that internal factors such as NPF, FDR, OER, and CAR significantly impact ROA, while external factors such as GDP and exchange rate have no effect. Low efficiency causes instability, and inflation and currency rates encourage Islamic banking stability—meanwhile, deflation and the decline in the rupiah exchange rate instability.

Daoud & Kammoun (2020) on the financial stability and capital of Islamic banks during the 2010-2014 period found that the capital ratio, bank size, FDR, total loans to total assets, total deposits on total assets and overhead costs to total assets affect the stability of sharia commercial banks. In the data, it can be seen that there is a relationship between the bank specification variable and the financial stability of Islamic banks.

Rajhi (2012) examines the risk of bankruptcy in Islamic and conventional banks in the Middle East, North Africa and Southeast Asia from 2000-2008 with the Z-Score calculation. It was found that sharia banks are more stable than conventional banks, except for small Islamic banks. The most common factors influencing the instability of Islamic banks are NPF and income diversification.

Mat Rahim & Zakaria (2013) compared the stability index between Islamic banks and Malaysian conventional banks, showing that Islamic banks were relatively stable during the financial crisis using the Z-Score and NPL calculations. Stability does not include income diversification functions for Islamic banks but, on the contrary, for conventional banks. Therefore Islamic banks still have more stable income than conventional banks. The findings of Nugroho & Qizam (2014) show that Islamic banks remained stable with an increasing trend during the crisis compared to conventional banks. Bilgin et al. (2020) found that global economic uncertainty can increase the risk of failure. It was found that Islamic banks are immune to economic uncertainty.

Didier et al. (2021) explained that the crisis that hit the world differed from previous crises. The Covid-19 pandemic halted economic activity and harmed companies. It is difficult to find jobs, and the increasing need impacts other economic sectors, one of which is banking (Hanoatubun, 2020). Wahyudi et al. (2021) found that Indonesia had a big impact as one of the countries most affected by the Covid-19 pandemic in Southeast Asia. One of which was financial institutions and the Islamic banking system. CAR and BOPO significantly impacted profitability as a proxy for stability, while NPF and FDR had fewer impacts. At Wahyudi (2020), profitability during the Covid-19 pandemic found that overall, CAR, FDR, BOPO, NPF and inflation affected ROA. However, Tahliani's (2020) findings show the challenges of Islamic banking in the Covid-19 pandemic by suppressing or reducing NPF payments to remain stable.

Based on previous studies, further exploration is fascinating to do in this research. A more specific discussion regarding the financial stability of Islamic banking pre-pandemic and during the Covid-19 pandemic is an interesting discussion. The discussion focuses on the Islamic bank financial stability in Q1, Q2, Q3, Q4 2019 and the period during the Covid-19 pandemic in Q1, Q2, Q3, and Q4 2020, as well as more categories of Islamic banks that issue quarterly financial reports in the study period.

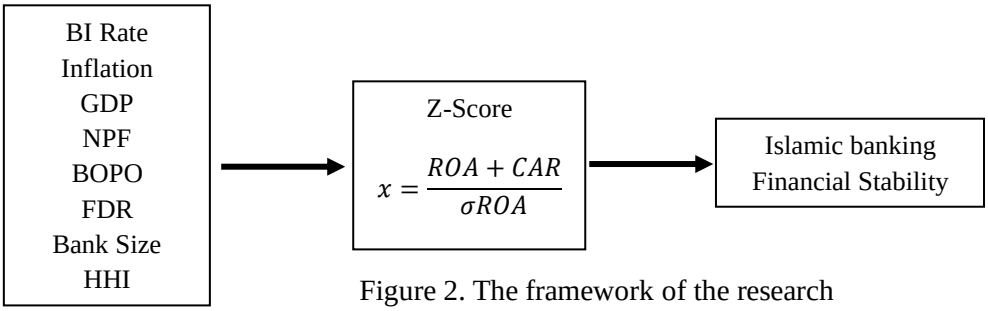

Figure 2. The framework of the research

ISSN: 2548-3544 (online), 2549-0850 (print)
DOI: https://doi.org/10.26740/aluqud.v7n1.p17-32

Hypotheses are required as a quick response to the problem being examined until the researcher obtains answers to research based on empirical data. Here is the hypothesis of this study:

Ho: There was no significant difference in the financial stability of Islamic banking pre-pandemic and during the Covid-19 pandemic.

Ha: There were significant differences in the financial stability of Islamic banking pre-pandemic and during the Covid-19 pandemic.

Methodology

Design of the research

According to Riduwan (2014), the population is the total parts that will be studied and concluded. The population used is all active BUS and registered with OJK. The sample is part of the population. Therefore, in the sample selection, efforts are made to describe the uniqueness of the population. Non-probability sampling with purposive sampling technique took samples. It can be seen that the samples taken were samples that matched the established criteria, including Islamic Commercial Bank, which is active and registered with OJK and has been operating since 2019. Islamic Commercial Banks have released quarterly financial reports from the second quarter of 2019 to the fourth quarter of 2020. The purposive sampling technique obtained 13 of 14 Sharia Commercial Banks. There are West Nusa Tenggara BPD Syariah, Victoria Syariah Bank, BNI Syariah Bank, BRI Syariah Bank, Mandiri Syariah Bank, Muamalat Indonesia Bank, Mega Syariah Bank, Bukopin Syariah Bank, BTPN Syariah, BCA Syariah, Panin Dubai Bank Syariah, Net Bank Syariah.

Types of Data, Data Sources and Data Collection Techniques

The type of research data used is secondary, meaning that the data is obtained by researchers indirectly (Bungin, 2010). Secondary data used in this study is the publication of Islamic bank financial reports for the first, second, third and fourth quarters of 2019 and the first, second, third and fourth quarters of 2020. The focus of comparing performance and available financial data is the author's consideration in taking 2019 and 2020 when the research is conducted. Then, it compared with before the Covid-19 pandemic and when Covid-19 occurred from Otoritas Jasa Keuangan (Authority Financial Services), statistical data on inflation per month, GDP per month, BI Rate per month from the website of Badan Pusat Statistik (Central Statistics Agency).

Data analysis technique

This study uses comparative statistical data analysis techniques using paired T-Test. This test is used to test the comparison of the comparative hypothesis between two samples (Sugiyono, 2014). The use of this test is based on the comparison of the results of data processing between pre-pandemic when the Covid-19 pandemic occurred and during the Covid-19 pandemic.

Results and Discussion

Descriptive Statistics Test

Table 4.1 descriptive statistical results present the N data used in each cell, totalling 4 which is the accumulation of each variable in the quarters in 2019 and 2020. Data before the Covid-19 pandemic, the mean Z-Score value of 6316 is higher than the mean Z-Score 5074 during the Covid-19 pandemic, the mean FDR 1378 before the Covid-19 pandemic was higher than the mean FDR 1084 during the Covid-19 pandemic. The mean NPF 22 before the Covid-19 pandemic was higher than the mean NPF 21 during the Covid-19 pandemic, the mean value of GDP 5 before the Covid-19 pandemic was higher than the mean value of GDP during the Covid-19 pandemic, the mean value of BI Rate 6 before the Covid-19 pandemic was higher than the

mean value of BI Rate 4 during the Covid-19 pandemic, the mean value of inflation was 3 before the Covid-19 pandemic was higher than the mean value of Inflation 2 during the Covid-19 pandemic.

Data during the Covid-19 pandemic showed that the mean BOPO 1194 was higher than the mean BOPO 1123 before the Covid-19 pandemic. The mean bank size of 24625310 during the Covid-19 pandemic was more significant than the mean bank size of 21201597 before the Covid-19 pandemic, and the mean HHI value of 4209 during the Covid-19 pandemic was higher than the mean HHI value before the Covid-19 pandemic.

In the data before the Covid-19 pandemic, the value of Std. Deviation FDR, NPF, HHI and BI Rate are higher than the Std value of Deviation FDR, NPF, HHI and BI Rate during the Covid-19 pandemic. It can be seen that the FDR, NPF, HHI and BI Rate ratios before the Covid-19 pandemic had a more comprehensive data distribution range and a high standard of error from the FDR, NPF ratio, HHI and BI Rate before the Covid-19 pandemic. Meanwhile, in data during the Covid-19 pandemic, the value of Std. Deviation Z-Score, BOPO, Bank Size, GDP and Inflation are higher than the Std value. Deviation of Z-Score, BOPO, Bank Size, GDP and Inflation before the Covid-19 pandemic, so it can be seen that the ratio of Z-Score, BOPO, Bank Size, GDP and Inflation during the Covid-19 pandemic has a broader range of data distribution and is also high standard errors from the ratio of Z-Score, BOPO, Bank Size, GDP and Inflation before the Covid-19 pandemic.

Table 1. Test Results of Paired Samples Statistics

No.	Financial stability ratio	N	Before Covid-19 Pandemic		During Covid-19 Pandemic	
			Mean	*Std. Deviation*	*Mean*	*Std. Deviation*
1	Z-Score	4	6.316	4.07	5.074	5.40
2	FDR	4	1.378	1.73	1.084	2.5
3	BOPO	4	1.123	1.1	1.194	5.4
4	NPF	4	2.2	2	2.1	1
5	Bank Size	4	2.1201507	1.267712	2.4625310	1.585771
6	HHI	4	4.188	4.2	4.209	1.8
7	GDP	4	5	0.04	3	1
8	BI Rate	4	6	0.47	4	0.41
9	Inflasi	4	3	0.32	2	0.66

Source: Data processed by the author (2021)

Paired T-Test

The following table 2 presents the output that displays the results of the t-test, df test results and the significance value of each financial stability ratio. Decision-making is taken from the value of Sig. (2- provided that if the probability is > 0.05, then the null hypothesis can be accepted, and if the probability is < 0.05, then the null hypothesis cannot be accepted (Priyastama, 2017). With the significance value of the financial stability ratio Z-Score 0.056, BOPO 0.103, NPF 0.141, HHI 0.509, GDP 0.100, and inflation 0.126 > 0.05, it can be concluded that the null hypothesis is accepted. In contrast, the financial stability ratio is FDR 0.045, Bank Size is 0.001, and BI Rate is 0.001 <0.05, so it can be concluded that the null hypothesis cannot be accepted.

ISSN: 2548-3544 (online), 2549-0850 (print)
DOI: https://doi.org/10.26740/aluqud.v7n1.p17-32

Table 2. Paired Samples Test Results

No.	Financial Stability Ratio before and during Covid-19	t	Df	Sig. (2-tailed)
1	Z-Score	3.032	3	0.056
2	FDR	3.333	3	0.045
3	BOPO	-2.322	3	0.103
4	NPF	1.985	3	0.141
5	Bank Size	-11.336	3	0.001
6	HHI	-7.48	3	0.509
7	GDP	2.348	3	0.100
8	BI Rate	14.027	3	0.001
9	Inflasi	2.108	3	0.126

Source: Data processed by the author (2021)

Z-Score as a financial stability variable proved to have no average difference between before the Covid-19 pandemic and during the Covid-19 pandemic (referring to table 2), but there was a difference in the mean value of Z-Score before the Covid-19 pandemic higher than the mean value of Z-Score during the Covid-19 pandemic (referring to table 1), the position of both above the number 2675 so that it is still safe from the threshold of bankruptcy (Michael, With these results, it is understood that the level of likelihood of insolvency before the pandemic is more minor than during a pandemic and can be interpreted even though Islamic banks are resistant to crises both in principle and practice (Bilgin et al., 2020), but regulators must still pay specific attention if there is a problem because it affects stability (Lasty et al., 2019; Michael, 2017). In more sophisticated business developments, Z-Score can effectively identify indications of danger (Chiaramonte et al., 2015).

In the FDR variable, it was found that there was an average difference between before the Covid-19 pandemic and during Covid-19 (referring to table 2). In contrast, the average FDR before the Covid-19 pandemic was higher than during the Covid-19 pandemic (referring to table 1). This shows that the financing level provided before the Covid-19 pandemic is higher, which can increase bank income to finance revenue and has higher liquidity risk (Wahyu, 2016). During the Covid-19 pandemic, the number of financing decreased compared to before the pandemic. This is due to banks controlling financing, so there is no high liquidity risk (Wahyudi, 2020).

The increase in high FDR will also increase the operating burden that can burden banks (Festiani, 2016), so there need to be financing restrictions (Riahi, 2020). The high FDR does not increase financing risk if appropriately managed (Wahyudi et al., 2021). Overall indicates that FDR affects the increase in ROA, which also affects stability (Nahar et al., 2020; Pravasanti, 2018).

BOPO financial stability ratio has no difference in average between before the Covid-19 pandemic and during the Covid-19 pandemic (referring to table 2). However, it has a difference in the mean value where the mean during the Covid-19 pandemic was higher than before the Covid-19 pandemic (referring to table 1), which states that the level of operational efficiency during the pandemic is lower than before the Covid-19 pandemic took place, The increase in BOPO at the time of the Covid-19 pandemic can be caused by increased operations in response to financing operational management so that there needs to be increased efficiency, BOPO is an efficiency proxy that is closely related to increasing ROA and maintaining stability (Fatoni & Sidiq, 2019; Festiani, 2016; Perdanasari, 2018; Wibowo & Syaichu, 2013; Zulfiah & Susilowibowo, 2014).

NPF financial stability ratio has no average difference between before the Covid-19 pandemic. During the Covid-19 pandemic (referring to table 2), while the NPF mean value

before the Covid-19 pandemic is higher than during the Covid-19 pandemic (referring to table 1), it can be interpreted that the control of the risk of default before the pandemic is lower than during the Covid-19 pandemic in terms of pay, it can also be interpreted that the financing mapping provided is still less efficient. in reducing NPF numbers, other things occur during the Covid-19 pandemic Islamic banks are more selective in choosing financing to reduce the level of the possible risk of default that can have an impact on increasing reserves and disrupt capital circulation and can also have an impact on decreased ROA and stability if not evaluated (Festiani, 2016; Mandani, 2019; Perdanasari, 2018; Pradhan, 2014; Pravasanti, 2018; Wahyudi, 2020; Wibowo & Syaichu, 2013).

The bank's financial stability ratio has an average difference between before the Covid-19 pandemic and during the Covid-19 pandemic (referring to table 2). On the other hand, the mean difference indicates that the number before the Covid-19 pandemic is lower than during the Covid-19 pandemic (referring to table 1). This indicates total assets of Islamic banks during the Covid-19 pandemic have increased despite the crisis due to the pandemic. While there is a difference between banks with small total assets, banks tend to maintain assets during the pandemic so that assets managed as financing are reduced (Lasty et al., 2019; Parvin et al., 2019).

The HHI financial stability ratio or the Herfindahl Hirschman Index does not have an average difference between before the Covid-19 pandemic and during the Covid-19 pandemic (referring to table 2). This indicates no relationship exists between the level of competition for Islamic banks regarding financing and funds. Third parties between before the pandemic and during the Covid-19 pandemic, then the mean value before the Covid-19 pandemic was smaller than the mean value during the Covid-19 pandemic (referring to table 1). This was because there were banks that experienced a decline in the number of financing and DP3 during the pandemic, so market forces were getting stronger. The Covid-19 pandemic has also resulted in the public trusting large banks more than small ones, so there is a possibility of higher trust in large banks than in small ones (Beck, De Jonghe, & Schepens, 2012; Lasty et al., 2019).

The GDP financial stability ratio has no average difference between before Covid-19 and during the Covid-19 pandemic (referring to table 2), while the mean value of GDP before the Covid-19 pandemic is higher than during the pandemic (referring to table 1). A measure of GDP based on total national income describes welfare, but an increase in GDP does not go hand in hand with an increase in welfare (OECD, 2020). The GDP figure, an indicator of welfare, impacts people's saving behaviour so that it can impact the circulation of funds in Islamic banks (Mandani, 2019; Meyliana & Mulazid, 2017; Nugroho & Qizam, 2014; Setiawan, 2009).

The BI Rate, one of the financial stability ratios, has an average difference before Covid-19. During Covid-19 (referring to table 2), the BI Rate before the Covid-19 pandemic has a relationship with the BI Rate during the Covid-19 pandemic. In contrast, The mean BI Rate before the Covid-19 pandemic was higher than the mean value during the pandemic (refer to table 1). This indicates that the BI Rate lowers interest rates during the pandemic to strengthen financing and assist in financing relaxation efforts (Adha & Joesoef, 2020).

The inflation financial stability ratio variable does not have an average difference between before the Covid-19 pandemic and during the Covid-19 pandemic (referring to table 2). In contrast, the mean value of inflation before the Covid-19 pandemic tends to be higher than during the Covid-19 pandemic. , higher mean inflation before the pandemic stimulated higher economic growth than during the pandemic. This pandemic caused a crisis that had never been felt and studied in the past, so the process of economic adaptation was much more difficult with the events that occurred (Didier et al., 2021; Djalante et al., 2020). The low inflation during the Covid-19 pandemic was related to weak domestic demand due to the Covid-19 pandemic (Bank Indonesia 2020). The rise and fall of the inflation rate provide a stimulus for public saving and

ISSN: 2548-3544 (online), 2549-0850 (print)
DOI: https://doi.org/10.26740/aluqud.v7n1.p17-32

a signal that investors anticipate that the stability of Islamic banks will be affected (Aviliani et al., 2015; Raharjo, Wijayanti, & Dewi, 2020; Wibowo & Syaichu, 2013).

Conclusion

Empirical findings show that the Z-Score, BOPO, NPF, HHI, GDP and inflation variables do not have an average difference between before Covid-19 and during the Covid-19 pandemic, which is indicated by the Sig value. (2-tailed) > 0.05, while the FDR, Bank Size and BI Rate variables have an average difference between before the Covid-19 pandemic and during the Covid-19 pandemic. This finding is based on the literature that has been reviewed, confirming that before the Covid-19 pandemic took place, Islamic banks were more stable than during the Covid-19 pandemic. However, the stability of Islamic banks during the Covid-19 pandemic is not much different from the stability of Islamic banks before the Covid-19 pandemic. These findings provide practical implications regarding the stability of Islamic banks, which are very closely related to the performance of Islamic banks. Islamic banks must pay more attention to various matters related to stability and carry out strategic simulations to be better prepared to face the possibility of a worse crisis to maintain stability.

Author's Contribution

Moh. Alfiyan Lu'lu Firdaus: Contribute to formulating research ideas, collecting data, processing data, and interpreting data
Rofiul Wahyudi: Contributing to writing systematics, research methods, analyzing interpretation results
Maimunah Binti Ali: Contribute to the language proofread
Riduwan: Contributed to compiling a literature review

Acknowledgements

The researcher would like to thank those who have helped complete this article, especially when collecting data and reviewing the contents of the article. The authors also thank Ahmad Dahlan University and Tun Hussein Onn University Malaysia.

Declaration of Competing Interest

We declare that we have no conflict of interest.

References

Abdullah. (2013). Analisis Faktor-faktor yang Mempengaruhi Penghimpunan Deposito Mudharabah Perbankan Syariah di Indonesia. *Jurnal Akuntansi*, *11*(4), 595–604. https://doi.org/10.1016/j.entcs.2012.11.002

Adha, R. A., & Joesoef, I. E. (2020). Penerapan Relaksasi Kredit Bagi Lembaga Pembiayaan Terkait Pandemi Corona Di Indonesia. *Nusantara: Jurnal Ilmu Pengetahuan Sosial*, *7*(2), 408–420. https://doi.org/10.31604/jips.v8i2.2021.370-376

Amalia, A. N. (2018). Analisis Perbandingan Tingkat Stabilitas Keuangan Perbankan Syariah dan Konvensional di Indonesia. *Syi`ar Iqtishadi : Journal of Islamic Economics, Finance and Banking*, *2*(1), 1. https://doi.org/10.35448/jiec.v2i1.3414

Arifin, Z. (2006). Dasar-Dasar Manajemen Bank Syariah (4th, Mei 200 ed.). Pustaka Alvabet.

Aviliani, Siregar, H., Maulana, T. N. A., & Hasanah, H. (2015). The Impact of Macroeconomic Condition on The Banks Performance in Indonesia. *Buletin Ekonomi Moneter dan Perbankan*, *17*(4), 379–402. https://doi.org/10.21098/bemp.v17i4.503

Bank Indonesia. (2020a). BI 7-Day Reverse Repo Rate (BI7DRR).

Bank Indonesia. (2020b). Merespon Pandemi COVID-19: Menjaga Stabilitas Sistem Keuangan, Mengakselerasi Pemulihan Ekonomi Nasional Kajian Stabilitas Keuangan

No. 35, September 2020 Bank Indonesia.
Beck, T., De Jonghe, O., & Schepens, G. (2012). Bank Competition and Stability: Cross-Country Heterogeneity. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.1711165
Berger, A. N., Klapper, L. F., & Turk-Ariss, R. (2009). Bank competition and financial stability. *Journal of Financial Services Research, 35*(2), 99–118. https://doi.org/10.1007/s10693-008-0050-7
Bhagat, S., Bolton, B., & Lu, J. (2015). Size, Leverage, and Risk-taking of Financial Institutions Sanjai Bhagat. *Journal of Banking and Finance, 59*, 530–537. https://doi.org/10.1016/j.jbankfin.2015.06.018
Bidari, A. S., & Nurviana, R. (2020). Stimulus Ekonomi Sektor Perbankan Dalam Menghadapi Pandemi Coronavirus Disease 2019 Di Indonesia. *Legal Standing : Jurnal Ilmu Hukum, 4*(1), 297. https://doi.org/10.24269/ls.v4i1.2781
Bilgin, M. H., Danisman, G. O., Demir, E., & Tarazi, A. (2020). Economic Uncertainty and Bank Stability: Conventional vs. Islamic Banking. *SSRN Electronic Journal, 56*, 1–40. https://doi.org/10.2139/ssrn.3708098
Bungin, B. (2010). Metodologi Penelitian Kuantitatif (1st ed.). Kencana.
Burhanuddin, C. I., & Abdi, M. N. (2020). Ancaman Krisis Ekonomi Global Dari Dampak Penyebaran Virus Corona (COVID-19). *AkMen Jurnal Stienobel Indonesia, 17*(1), 90–98.
Chiaramonte, L., Croci, E., & Poli, F. (2015). Should we trust the Z-score? Evidence from the European Banking Industry. *Global Finance Journal, 28*, 111–131. http://dx.doi.org/10.1016/j.gfj.2015.02.002
Cihák, M., & Hesse, H. (2007). Cooperative Banks and Financial Stability. *IMF Working Papers, 07*(2), 1. https://doi.org/10.5089/9781451865660.001
Daoud, Y., & Kammoun, A. (2020). Financial Stability and Bank Capital: the Case of Islamic Banks. *International Journal of Economics and Financial Issues, 10*(5), 361–369. https://doi.org/10.32479/ijefi.10147
Didier, T., Huneeus, F., Larrain, M., & Schmukler, S. L. (2021). Financing firms in hibernation during the COVID-19 pandemic. *Journal of Financial Stability, 53*, 100837. https://doi.org/10.1016/j.jfs.2020.100837
Djalante, R., Lassa, J., Setiamarga, D., Sudjatma, A., Indrawan, M., Haryanto, B., Mahfud, C., Sabaruddin, M., Djalante, S., Ra, I., Adi, L., Ayu, G., Surtiari, K., & Warsilah, H. (2020). Progress in Disaster Science Review and analysis of current responses to COVID-19 in Indonesia: Period of January to March 2020. *Progress in Disaster Science Journal, 6*. https://doi.org/10.1016/j.pdisas.2020.100091
Elsa, & Utami, W. (2015). Studi Komparasi Efisiensi, Kualitas Aset Dan Stabilitas Pada Bank Umum Syariah Dan Bank Umum Konvensional Di Indonesia Periode 2010-2014. *Jurnal Ilmu Ekonomi dan Sosial*, 4(1), 104–114.
Fatoni, A., & Sidiq, S. (2019). Analisis Perbandingan Stabilitas Sistem Perbankan Syariah Dan Konvensional Di Indonesia. *Ekspansi: Jurnal Ekonomi, Keuangan, Perbankan Dan Akuntansi, 11*(2), 179–198. https://doi.org/10.35313/ekspansi.v11i2.1350
Festiani, E. R. (2016). Analisis Pengaruh Rasio CAR, NPF, BOPO, ROA, dan FDR terhadap Tingkat Kesehatan Bank Umum Syariah di Indonesia. *El-Dinar, 4*(2), 196–211. https://doi.org/10.18860/ed.v4i2.5462
Goetz, M. R. (2018). Competition and bank stability. *Journal of Financial Intermediation, 35*, 57–69. https://doi.org/10.1016/j.jfi.2017.06.001
Hafidah, Muhammad, A. S., Achmad, A, P. (2020). Analisis Perbandingan Tingkat Stabilitas Sistem Keuangan Perbankan Syariah Dan Konvensional Di Bank Indonesia Periode Tahun 2013-2018. e – Jurnal Riset Manajemen PRODI MANAJEMEN, 09(6), 1–13.
Hanoatubun, S. (2020). Dampak Covid-19 Terhadap Perekonomia Indonesia. *EduPsyCouns Journal, 2*(1), 146–154.

Heniwati, E. (2019). Studi Empiris Kekuatan Stabilitas Keuangan Perbankan Syariah di Indonesia. *Jurnal Ekonomi Bisnis dan Kewirausahaan*, *8*(2), 147–160. https://doi.org/10.26418/jebik.v8i2.28015

Ismail. (2011). Perbankan Syariah (1st ed.). Jakarta. Kencana.

Khan, M. S., & Mirakhor, A. (1994). Monetary Management in an Islamic Economy. J*ournal of King Abdulaziz University-Islamic Economics*, *6*(1), 3–21. https://doi.org/10.4197/islec.6-1.1

Laeven, L., Ratnovski, L., & Tong, H. (2014). Bank Size, Capital, and Systemic Risk: Some International Evidence. *SSRN Electronic Journal*, *69*(1), 525–534. https://doi.org/10.2139/ssrn.2508910

Lasty, A. D., Nusantara, S. T. D., Laba, A. R., Ali, M., & Soebarsah, M. (2019). Determinants of Islamic Banking Stability in Indonesia. *International Journal of Academic Research in Business and Social Sciences*, *9*(7), 654–669. https://doi.org/10.6007/ijarbss/v9-i7/6158

Liston-Heyes, C., & Pilkington, A. (2004). Inventive concentration in the production of green technology: A comparative analysis of fuel cell patents. *Science and Public Policy*, *31*, 15–25. https://doi.org/10.3152/147154304781780190

Mandani, J. (2019). Analisis pengaruh faktor eksternal dan internal terhadap stabilitas keuangan bank syariah di indonesia tahun 2015-2018. Thesis. Universitass islam negeri sunan kalijaga.

Mankiw, N. G. (2018). Pengantar Ekonomi Makro. Principles of Economics. (7th ed.). Jakarta. Salemba Empat.

Mat Rahim, S. R., & Zakaria, R. H. (2013). Comparison on Stability between Islamic and Conventional Banks in Malaysia. *Journal of Islamic Economics , Banking and Finance*, *9*(3), 131–149. https://doi.org/10.12816/0001618

Meyliana, D., & Mulazid, A. S. (2017). Pengaruh Produk Domestik Bruto (PDB), Jumlah Bagi Hasil dan Jumlah Kantor terhadap Jumlah Deposito Muḍārabah Bank Syariah di Indonesia Periode 2011-2015. *Economica: Jurnal Ekonomi Islam*, *8*(2), 263–283. https://doi.org/10.21580/economica.2017.8.2.1442

Michael, N. B. (2017). Altman ' s Z -Score Discriminant Analysis and Bankruptcy Assessment of Banks in Nigeria. *Covenant Journal of Business & Social Sciences (CJBSS)*, *8*(1), 1–15.

Monnin, P., & Jokipii, T. (2010). The impact of banking sector stability on the real economy. *Journal of International Money and Finance*, *32*. https://doi.org/10.1016/j.jimonfin.2012.02.008

Nahar, F. H., Faza, C., & Azizurrohman, M. (2020). Macroeconomic Analysis and Financial Ratios on Sharia Commercial Bank Profitability: A Case Study of Indonesia. Ihtifaz: *Journal of Islamic Economics, Finance, and Banking*, *3(1)*, 37. https://doi.org/10.12928/ijiefb.v3i1.1721

Ningsih, M. R., & Mahfudz, M. S. (2020). Dampak Pandemi Covid-19 Terhadap Manajemen Industri Perbankan Syariah: Analisis Komparatif. *Point: Jurnal Ekonomi dan Manajemen*, *2*(1), 1–10. https://doi.org/10.46918/point.v2i1.576

Nugroho, L., & Anisa, N. (2018). Pengaruh Manajemen Bank Induk, Kualitas Aset, Dan Efisiensi Terhadap Stabilitas Bank Syariah Di Indonesia (Periode Tahun 2013-2017). *Inovbiz: Jurnal Inovasi Bisnis*, *6*(2), 114. https://doi.org/10.35314/inovbiz.v6i2.833

Nugroho, L., & Bararah, H. N. (2018). Pengaruh Good Corporate Governance Dan Biaya Operasional Dan Pendapatan Operasional (BOPO) Terhadap Stabilitas Keuangan Bank Umum Syariah Di Indonesia Tahun 2012-2017. *Inovbiz: Jurnal Inovasi Bisnis*, *6*(2), 160.

https://doi.org/10.35314/inovbiz.v6i2.852
Nugroho, M. R., & Qizam, I. (2014). Financial System Stability in Indonesia during The Global Financial Crisis 2007/2008: Conventional vis-à-vis Islamic. *Global Review of Islamic Economics and Business*, *2*(2), 136–158. https://doi.org/10.14421/grieb.2014.022-05
OECD. (2020). Coronavirus (COVID-19): Living with uncertainty. September, 1–18.
OJK. (2020). SPS Januari 2020. Statistik Perbankan Syariah.
Otoritas Jasa Keuangan. (2015). Stabilitas Sistem Keuangan.
Parvin, S., Chowdhury, A. N. M. M. H., Siddiqua, A., & Ferdous, J. (2019). Effect of Liquidity and Bank Size on the Profitability of Commercial Banks in Bangladesh. *Asian Business Review*, *9*(1), 7–10. https://doi.org/10.18034/abr.v9i1.219
Perdanasari, P. Y. (2018). Analisis Pengaruh CAR, NPF, FDR, BOPO, BI rate dan Inflasi terhadap Tingkat Profitabilitas Perbankan Syariah di Indonesia Periode 2011-2017. *Jurnal Universitas Islam Indonesia*, *1*–27. 10-21.
Pradhan, R. (2014). Z Score Estimation for Indian Banking Sector. *International Journal of Trade, Economics and Finance*, *5*(6), 516–520. https://doi.org/10.7763/ijtef.2014.v5.425
Pravasanti, Y. A. (2018). Pengaruh NPF dan FDR Terhadap CAR dan Dampaknya Terhadap ROA Pada Perbankan Syariah Di Indonesia. *Jurnal Ilmiah Ekonomi Islam*, *4*(03), 148-158. https://doi.org/10.29040/jiei.v4i03.302
Priyastama, R. (2017). Buku Sakti Kuasai SPPS Pengolahan Data & Analisis Data (Tari (ed.); 1st ed.). PT Anak Hebat Indonesia.
Raharjo, H., Wijayanti, A., & Dewi, R. R. (2020). Analisis Pengaruh Kinerja Keuangan Dan Inflasi Terhadap Profitabilitas Bank Umum Syariah di Indonesia (Tahun 2014-2018). *Jurnal Ilmiah Akuntansi dan Manajemen*, *16* (1), 15–26. https://doi.org/10.31599/jiam.v16i1.110
Rajhi, W. (2012). Islamic Banks and Financial Stability: A Comparative Empirical Analysis between MENA and Southeast Asian Countries. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.2010126
Riahi, Y. (2020). Examining the relationship between bank stability and earnings quality in Islamic and conventional banks. *International Journal of Islamic and Middle Eastern Finance and Management*, *13*(5), 803–826. https://doi.org/10.1108/IMEFM-10-2018-0328
Riduwan. (2014). Dasar-Dasar Statistika (P. D. Iswarta (ed.)). Alfabeta.
Ryandono, M. N. H., & Wahyudi, R. (2018). Manajemen Bank Islam (1st, Mei 201 ed.). Yogyakarta. UAD Press.
Schaeck, K., & Cihák, M. (2014). Competition, Efficiency, and Stability in Banking. *Financial Management*, *43*(1), 215–241. https://doi.org/10.1111/fima.12010
Schinasi, G. J. (2005). Preserving Financial Stability. In IMF External Relations Department (Ed.), Economic Issues (Issue 36). International Monetary Fund.
Setiawan. (2009). Analisis Pengaruh Faktor Makroekonomi, Pangsa Pasar dan Karakteristik Bank Terhadap Profitabilitas Bank Syariah (Studi Bank Syariah Periode 2005-2008). Tesis, 1–100.
Soemitra, A. (2016). Bank dan Lembaga Keuangan Syariah (6th ed.). Jakarta. Kencana.
Sudarsono, H. (2018). Analisis Pengaruh Variabel Mikro Dan Makro Terhadap NPF Perbankan Syariah di Indonesia. *Equilibrium: Jurnal Ekonomi Syariah*, *6*(1), 1. https://doi.org/10.21043/equilibrium.v6i1.3040
Sugema, I. (2012). Krisis Keuangan Global 2008-2009 dan Implikasinya pada Perekonomian Indonesia (2008-2009 th Global Financial Crisis and Its Implications on Indonesian Economy). *Jurnal Ilmu Pertanian Indonesia (JIPI)*, *17*(3), 145–152.
Sugiyono. (2014). Statistik Untuk Penelitian (25 Oktober). Jakarta.Alfabeta.
Tahliani, H. (2020). Tantangan Perbankan Syariah dalam Menghadapi Pandemi Covid-19.

Madani Syari'ah, 3(2), 92–113. https://doi.org/10.51476/madanisyari'ah.v3i2.205

US Deparment of Justice, & Federal Trade Commission. (2010). Horizontal merger guidelines (08/19/2010). 1–37.

Wahyu, D. R. (2016). Financing to Deposit Ratio (FDR) sebagai salah satu Penilaian Kesehatan Bank Umum Syariah (Study Kasus Pada Bank BJB Syariah Cabang Serang). *ISLAMICONOMIC: Jurnal Ekonomi Islam, 7*(1), 19–36. https://doi.org/10.32678/ijei.v7i1.34

Wahyudi, R. (2020). Analisis Pengaruh CAR, NPF, FDR, BOPO dan Inflasi terhadap Profitabilitas Perbankan Syariah di Indonesia: Studi Masa Pandemi Covid-19. *At-Taqaddum, 12*(1), 13. https://doi.org/10.21580/at.v12i1.6093

Wahyudi, R., Mujibatun, S., & Riduwan, R. (2019). Debt And Equity-Based Financing, Size And Islamic Banks Profitability: Empirical Evidence From Indonesia. *Iqtishadia, 12*(2), 227. https://doi.org/10.21043/iqtishadia.v12i2.3539

Wahyudi, R., Mutmainah, L., Nahar, F. H., Adha, M. A., & Rifan, A. A. (2021). Determinants of Profitability in Indonesian Islamic Banking : Case Study in the COVID-19 Period. *Integrated Journal of Business and Economics, 5*(1), 37–46. https://doi.org/10.33019/ijbe.v4i3.333

Wibowo, E. S., & Syaichu, M. (2013). Analisis pengaruh suku bunga, inflasi, CAR, BOPO, NPF terhadap profitabilitas bank syariah. *Diponegoro Journal of Management, 2*(2), 1–10.

Widarjono, A. (2020). Stability of Islamic banks in Indonesia: Autoregressive Distributed Lag Approach. *Jurnal Keuangan dan Perbankan, 24*(1), 40–52. https://doi.org/10.26905/jkdp.v24i1.3932

Wijaya, F. (1992). Seri Pengantar Ekonomikamakro (Mei 1992). Yogyakarta.BPFE.

World Bank. (2016). Financial stability.

Yusuf, M. dan, & Wahyuni, S. (2017). Pengaruh CAR, NPF, BOPO, FDR, Terhadap ROA yang Dimediasi Oleh NOM. *Journal Bisnis dan Manajemen, 17*, 41–62.

Zulfiah, F., & Susilowibowo, J. (2014). Pengaruh inflasi, BI rate, Capital Adequacy Ratio (CAR), Non Performing Finance (NPF), Biaya Operasional dan Pendapatan Operasional (BOPO) terhadap profitabilitas Bank Umum Syariah periode 2008-2012. *Jurnal Ilmu Manajemen, 2* (3), 759–770.