“Comparative study on financial performance of Islamic banks and conventional banks before and after COVID-19: Evidence from Indonesia”

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COMPARATIVE STUDY ON FINANCIAL PERFORMANCE OF ISLAMIC BANKS AND CONVENTIONAL BANKS BEFORE AND AFTER COVID-19: EVIDENCE FROM INDONESIA

Abstract

The COVID-19 pandemic has affected bank lending growth to the point of decreasing banking profitability. Therefore, this study aims to analyze the differences in the performance of conventional banks and Islamic banks before and after the COVID-19 pandemic in Indonesia. This study uses secondary data with a quantitative approach. The performance is measured using four financial ratios: CAR, ROA, LDR or FDR, and BOPO. The population in this study is conventional banking and Islamic banking in Indonesia. The observation period for this study starts from pre-COVID-19 in June 2016 to March 2019 and post-COVID-19 from March 2020 to June 2023. The hypotheses were tested using the paired T-test and the one-sample Kolmogorov-Smirnov test for normally distributed data. The results of the one-sample Kolmogorov-Smirnov test on conventional banks show that whether there is a distinction between the performance of conventional banks and Islamic banks before and after the COVID-19 pandemic in Indonesia. The results of the graphic investigation indicate that there are financial ratios that have experienced an increase in performance, to be specific the CAR, ROA, and BOPO proportions, whereas the FDR or LDR tend to encounter a decrease in performance after COVID-19. There was an increase and decrease between before and after the outbreak of the COVID-19 pandemic in each proportion, which is still in the category with healthy and good banking qualification.

Keywords COVID-19 pandemic, banking profitability, quantitative approach, t-test method, ROA

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INTRODUCTION

The financial crisis was one of the most detrimental crises to the banking sector, both conventional and Islamic banks. The banking sector is also believed to be one of the most profitable sectors during the COVID-19 pandemic (Hassan et al., 2022). Broadly speaking, the impact of the COVID-19 pandemic on the economy is divided into two aspects, namely the effect of demand and supply, the effect of aggregate demand on unemployment income caused by lockdown, and the impact of supply by reducing working hours (Maliszewska et al., 2020). The shock of the COVID-19 pandemic requires the government to make policies in the form of maintaining social distancing, regional quarantine, and business closures. This is a shock to banking because it has the potential for problematic loans and a decrease in interest rates, which has an impact on low bank profitability.

The impact of the COVID-19 pandemic will spread to the banking sector, resulting in lost income and a spike in problematic loans, which have a negative impact on bank profits, solvency, and capital. Exploring the impact of COVID-19 on Islamic banks and conventional banks in 48 countries, including Indonesia, during the period from December 2019 to March 2020, it has been concluded that the performance of Islamic banks was poor but was able to experience a sharp recovery. Sharia compliance does not limit the negative impact of COVID-19 on Islamic banking, but the performance of Islamic banks responds more positively on the income side than conventional banks (Alabbad & Schertler, 2022). Each bank has different impacts and recovery strategies in dealing with it. So, this study also contributes to seeing how the performance of Islamic banks and conventional banks differs before and after the COVID-19 pandemic. Implementing a banking prudential system in regulatory actions, such as capital buffers and relaxing credit processing problems, is necessary to mitigate the negative impact of COVID-19 on the financial stability system (Xiazi & Shabir, 2022). Before COVID-19, there had been a crisis that rocked the banking industry which had a long-term impact on the economy. The crisis had changed the direction of the banking industry in such a way that continuous improvements in banking operations had been closely monitored by regulators to prevent major failures (Tanjung & Varianto, 2024).

1. LITERATURE REVIEW

In the last three decades, it is interesting that Islamic banking, which has become an alternative for Indonesian people, has been able to develop rapidly in the Indonesian field (Widarjono et al., 2023b). The strength of Islamic banking in facing a crisis needs to be taken into account. When the financial crisis in Indonesia in 1998 collapsed, most conventional banks and Islamic banks were able to survive the crisis (Serly et al., 2020). Business sectors experienced extraordinary changes, including during the COVID-19 pandemic. The affected sectors are the economy, health care, transportation, and industrial sectors in each region, which causes price wars and shakes world markets (Shen et al., 2020). Including the Indonesian economy, one of which is the real economic sector, namely trade and investment (Wahyuni et al., 2023). The impact of the COVID-19 pandemic on banking has been in various ways. Economic growth has weakened, leading to slower lending growth and lower banking profitability. Economic relations, including the increase and decrease in the economy of each country, greatly affect the economic stability of other countries (Febriandika et al., 2023a).

The banking industry sector has two different types of systems, namely Islamic banking (non-interest-based) and conventional banking (interest-based) (Viverita et al., 2022). These two banking systems compete to meet the needs and expectations of their customers. Sharia banks are unique from conventional banks, namely in the distribution of profits and losses. The impact of the pandemic cannot be ignored, considering how widely the COVID-19 pandemic has spread and affected many people throughout the world (Blanas & Oikonomou, 2023). Global society and the economy have changed dramatically (Shah et al., 2023). Triggering varying impact dynamics in facing short- and long-term challenges due to the pandemic, such as bank bankruptcies, have not shown good resilience to the COVID-19 pandemic as a whole, while subsectors, information technology, publishing, and social media have experienced positive effects (Khlystova et al., 2022).

The post-pandemic impact has not yet recovered, but has been exacerbated by the conflict between Russia and Ukraine (Febriandika et al., 2023c), This can be seen from the increase in the Rupiah exchange rate against the US Dollar, as well as the decline in the value of the Composite Stock Price Index and the Indonesian Sharia Stock Index. Likewise, the banking sector was affected by the COVID-19 pandemic, causing a fall in economic activity (Demir & Danisman, 2021). Uncertainty in money circulation can be motivated by several main risks that impact the Indonesian banking sector, namely credit distribution, decline in asset quality, and tightening of net margin interest (Ashraf et al., 2022).

Viverita et al. (2022) compared Islamic banks and conventional banks in Indonesia. The study evaluation included liquidity during the COVID-19

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pandemic from August 2018 to March 2021, showing that the COVID-19 pandemic consistently reduced overall banking liquidity. Another study found that Islamic banks had better financial performance in terms of recovery and sustainability than conventional banks during COVID-19 (Ghouse et al., 2022). This writing will expand the scope regarding the comparison between Islamic banking and conventional banking on financial performance in Indonesia. Previous research focused on several Islamic banks and conventional banks. Looking at the differences in terms of performance of Islamic banking and conventional banking in Indonesia could be an evaluation material for the banking sector, especially for regulators in developing the banking sector, as well as for the central bank as the monetary authority.

Exploring the performance of Islamic banks and conventional banks, comparing the two, and finding out the uncertainty of bank stability, which increases the risk of default in the banking sector, especially after the COVID-19 pandemic, companies will be vulnerable to financial distress. Financial distress is a condition experienced by a company caused by unhealthy financial conditions before ultimately experiencing bankruptcy (H. Platt & M. Platt, 2002). This condition is caused by various factors, both internal and external (Pertiwi, 2018). Internal factors are found in financial ratios, namely the Capital Adequacy Ratio (representing the capital ratio), which is a capital adequacy ratio to see the ratio of losses faced and meet the needs of depositors and creditors by comparing the amount of capital and the amount of risk-weighted assets. Return on Assets Ratio and Return on Equity (representing the profitability ratio) are one of the profitability ratios to assess a company's ability as a system for earning profits through assets. Operating Costs to Revenue (representing the efficiency ratio) compares operating costs and operating income in a company's profitability ratio (Kusumastuti & Alam, 2019). The Financing-to-Deposit Ratio (representing the liquidity ratio) is used to measure the amount of data after comparing it with the amount of savings or public savings.

The deposit levels of Islamic banks and conventional banks in the dual banking system in Indonesia have a dynamic relationship (Widarjono et al., 2023a). Research related to measuring CAR, ROA, OER, NPF, and FDR ratio models states that several important factors influence financial problems in Islamic banks and conventional banks, with the results showing that Islamic banks are better in terms of asset quality (Aldeen et al., 2020). The case study in Pakistan concluded that there was a positive and significant relationship with profitability, size, and deposits, but it negatively impacted the operations of Islamic banks and conventional banks due to COVID-19 moderation. COVID-19 has a moderate role, conventional banks are slightly affected, but it is very significant in operating efficiency, bank size, and profitability, so it is not significant for bank deposits. This comparison shows that Islamic banks are more affected by external conditions, including the influence of COVID-19, than conventional banks (Shah et al., 2023).

Other research found that liquidity acquisition in the Islamic and conventional banking systems in Indonesia continued to decline during the pandemic outbreak, with banks shifting their assets to safer assets. As expected, Islamic banks generate more liquidity, especially in off-balance sheet activities, which are not included in the liquidity measure. These results confirm that the unique Islamic market structure is consistent with Sharia law (Viverita et al., 2022). Solid banking performance has a critical commitment to economic growth and financial stability. A study comparing the strength and recuperation from COVID-19 between Islamic banks and conventional banks in six OIC nations found that Islamic banks performed well in the post-COVID-19 period due to lower drawdowns and superior proportions compared to conventional banks. In the interim, amid COVID-19, conventional banks performed better than Islamic banks since they had superior proportions and required a brief time to recoup (Ghouse et al., 2022).

Islamic banks are still expanding their commitment to investment loan portfolios more rapidly amid the COVID-19 widespread. The greater contraction in the credit portfolios of Islamic banks during the COVID-19 pandemic indicates that Islamic banks in Indonesia were not classified among the banks most in need of government assistance. In contrast, domestic conventional banks were the primary recipients of the largest share of

such support (Ashraf et al., 2022). After looking at the literature above, there are not many studies comparing the performance of the two banking systems, namely Islamic banks and conventional banks in Indonesia, as well as several different arguments in responding to the performance of the two banking systems.

The hypothesis formed in this test event study is to prove whether the research samples before and after the COVID-19 pandemic have averages significantly different or not. So, the basic assumption of this test is that each pair is in the same condition. The difference in means must be normally distributed. Below are the research requirements that must be met when accepting or rejecting the alternative hypothesis in a paired sample difference test. If t tally < t > 0.05, the hypothesis is rejected; if t number > t table (prob sign) < 0.05, at that point the theory is accepted.

This study aims to examine the impact of the COVID-19 pandemic on the financial performance of banks in Indonesia by comparing key financial indicators before and after the pandemic. Specifically, the study investigates whether there are significant differences in the Capital Adequacy Ratio (CAR), Return on Assets (ROA), Loan-to-Deposit Ratio (LDR) or Financing-to-Deposit Ratio (FDR), and the Operating Costs to Operating Income Ratio (BOPO) between the pre-pandemic and post-pandemic periods. The hypotheses generated during the event, taking into account the impact of the spread of COVID-19 on banking activities in Indonesia, are as follows:

H_1: *There is a difference in Capital Adequacy Ratio (CAR) financial performance of banks in Indonesia before and after the COVID-19 pandemic.*

H_2: *There is a difference in Return on Assets (ROA) financial performance of banks in Indonesia before and after the COVID-19 pandemic.*

H_3: *There is a difference in the Loan-to-Deposit Ratio (LDR) or Financing-to-Deposit Ratio (FDR) financial performance of banks in Indonesia before and after the COVID-19 pandemic.*

H_4: *There is a difference in the Operating Costs to Operating Income Ratio (BOPO) financial performance of banks in Indonesia before and after the COVID-19 pandemic.*

2. METHODS

This study used comparative quantitative approach, The data samples used are Islamic banks and conventional banks operating in Indonesia, registered with Bank Indonesia (central bank), and supervised by the Financial Services Authority (OJK). The data used covers pre Covid-19 pandemic starts from June 2016 to March 2019 and post Covid-19 pandemic from March 2020 to June 2023. The data source is the monthly financial report of each bank, which is published in the official OJK (Financial Services Authority). The variables used in this study are Capital Adequacy Ratio (CAR), Return on Asset Ratio (ROA), Operational Costs to Income (BOPO), and Financing to Deposits Ratio (FDR). Hypothesis testing analysis method uses a two-sample mean difference test method (paired sample t-test) to compare the performance of Islamic banks and conventional banks in Indonesia, but previously conducted a normality test. If the data are normally distributed, a difference test is carried out using the Paired Sample T-test. However, if the data are not normally distributed, a difference test is carried out on the performance of conventional banking and Islamic banking using the Wilcoxon test (Sasmita & Anindyantha, 2024). The study employs Microsoft Excel and SPSS 16 as statistical tools. A primary condition for this test is that the data should be normally distributed. For data that are not normally distributed, it is necessary to first transform them into the natural logarithm (ln) format.

3. RESULTS AND DISCUSSION

This paper investigates Islamic banks and conventional banks with their financial performance in recent times and post-COVID-19. Based on the inquiry, it was found that COVID-19 affected the banking and financial sector in Indonesia. Overall financial performance, in recent times and after the widespread COVID-19, if you look at it from the perspective of banking health qualifications, CAR meets very healthy qualifications, all above 8%.

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Return on Assets (ROA) showed strong performance after the COVID-19 pandemic. Islamic banks demonstrated resilience by maintaining profit levels above 1.5% during the pandemic. Although conventional banks experienced a slight decline, they still achieved ROA levels above 2%, indicating strong performance. The Loan-to-Deposit Ratio (LDR) improved during the pandemic, falling within the ideal range of 78% to 92%. In contrast, the Financing-to-Deposit Ratio (FDR) met only minimum standards, ranging between 80% and 100%. Meanwhile, the Operating Costs to Operating Income (BOPO) ratio remained within very good qualifications, staying below 94%.

In this area, the results of comparative testing and information research will be studied, with the aim of knowing the responses of Islamic banks and conventional banks recently and after COVID-19, with a combined T-test. Recently, when conducting a t-test, it has become essential to distinguish between changes in the typicality test. The normality test in the regression model is used to test whether the leftover values are ordinarily distributed or not. A great relapse shows regularly dispersed leftover values. The regression model employed a one-sample Kolmogorov-Smirnov test on the normal fluctuation of the two types of information for Islamic banks and conventional banks. Based on the one-sample Kolmogorov-Smirnov test, the null hypothesis (*H0*) is rejected, in the event that the likelihood is 0.05, at that point the data are regularly dispersed.

The results of the Kolmogorov-Smirnov test indicate that financial performance data on banks in

Table 1. Pre-COVID-19 and post-COVID-19 normality data test

One-Sample Kolmogorov-Smirnov Test				
Variable			**Islamic Bank**	**Conventional Bank**
CAR	N		40	40
	Normal Parameters	Mean	.0000000	.0000000
		Std. Deviation	1.77630283	1.12413871
	Most Extreme Differences	Absolute	.165	.128
		Positive	.165	.077
		Negative	–.121	–.128
	Test Statistic		1.046	.812
	Asymp. Sig. (2-tailed)		.224	.526
ROA	N		40	40
	Normal Parameters[a]	Mean	.0000000	.0000000
		Std. Deviation	.17324057	.52402168
	Most Extreme Differences	Absolute	.162	.099
		Positive	.106	.091
		Negative	–.162	–.099
	Test Statistic		1.021	.623
	Asymp. Sig. (2-tailed)		.248	.832
NPF/FDR	N		40	40
	Normal Parameters[a]	Mean	.0000000	.0000000
		Std. Deviation	2.64816671	3.84661799
	Most Extreme Differences	Absolute	.098	.089
		Positive	.059	.089
		Negative	–.098	–.072
	Test Statistic		.618	.565
	Asymp. Sig. (2-tailed)		.839	.907
BOPO	N		40	40
	Normal Parameters[a]	Mean	.0000000	.0000000
		Std. Deviation	4.10625616	7.59390748
	Most Extreme Differences	Absolute	.110	.203
		Positive	.100	.203
		Negative	–.110	–.189
	Test Statistic		.693	1.287
	Asymp. Sig. (2-tailed)		.723	.073

Indonesia are normally distributed. Based on table 1, it shows that for the CAR, ROA, NPF/FDR, and BOPO variables, asymp. Sig (2-tailed) is greater than 0.05. This is evident from financial performance test results for Islamic banks with a capital adequacy ratio (CAR) with a value of D (40) = 1.046, P = 0.224. Profitability of assets in managing fund total assets generating profit (ROA) with a value of D (40) = 1.021, P = 0.248. Non-performing financing ratio (NPF) with a value of D (40) = 0.618, P = 0.839. The ratio measures the level of efficiency and ability of Islamic banks in carrying out operational activities (BOPO) with a value of D (40) = 0.693, P = 0.723.

On the other hand, conventional bank performance data test results have a capital adequacy ratio (CAR), with a value of D (40) = 0.812, P = 0.526. Profitability of assets in managing funds, overall assets that generate profits (ROA) with a value of D (40) = 0.623, P = 0.832. Financing to deposit ratio (FDR) with a value of D (40) = 0.565, P = 0.907. The ratio measures the efficiency level and shows how capable Islamic banks are in carrying out operational activities (BOPO) with a value of D (40) = 1.287, P = 0.073. So, it is concluded that the results of the normality test for banking performance values in Indonesia after and before the impact of COVID-19 are significant and can be carried out with a parametric test, namely the paired sample T-test.

This section compares the financial performance of Islamic banks and conventional banks, with calculations for 40 months before and after COVID-19, which will start from the CAR, ROA, FDR/NPF, and BOPO ratios. The t-test is a test that states that the difference between the two observations is zero, assuming two paired sets, Xi and Yi, for i = 1, 2. So that the pair differences are independent and have an identical and normal distribution, then the paired t-test concludes whether the two are different from each other, or stay the same.

Table 2 shows that conventional banks have a capital adequacy ratio, which functions to accommodate the risk of loss faced by the bank (CAR), with the results of a significant difference between before (M = 22.94, SD = 0.539) and after the occurrence of COVID-19 (M = 24.38, SD = 1.14), t(39) = –6.712, p < 0.001. Meanwhile, the results of the t-test on Islamic banks are that there is a significant difference between before (M = 18.53, SD = 1.98) and after COVID-19 (M = 23.13, SD = 1.93), t (39) = –8.876, p < 0.001. Data from conventional banks and Islamic banks indicate that there has been an increase in CAR after COVID-19, which was higher than before COVID-19 occurred in Indonesia. The increase in the average CAR value occurred because, along with an increase in bank profitability, referring to Indonesian bank regulations with the best standard CAR being 8%, the average value of conventional banks and Islamic banks during the COVID-19 period was very good.

The difference in the monetary performance of CAR for conventional banks and Islamic banks is that their average value in the post-COVID-19 period was bigger than the average value pre COVID-19. The increase in the Capital Adequacy Ratio (CAR) of Indonesian banks after the COVID-19 pandemic can be attributed to several factors. During the pandemic, banks significantly reduced their credit disbursement due to rising credit risks and economic uncertainty, leading to a decline in risk-weighted assets. Since CAR is calculated by dividing capital by risk-weighted assets, a lower asset base results in a higher CAR. Additionally, many banks strengthened their capital positions through retained earnings or capital injections. Regulatory support, such as credit restructuring policies and relaxed asset quality assessments from the Financial Services Authority (OJK), also helped reduce reported risk exposures. Moreover, banks shifted their portfolios toward lower-risk assets, such as government securities, further improving their CAR levels.

Table 2. T-test for the CAR variable

Tests	N	Descriptive Statistics	Paired T-Test		
		M (Std. D)	t	Df	Sig.(2-tailed)
Conventional Bank Pre Test	40	22.94 (.539)	–6.712	39	.000*
Conventional Bank Post Test	40	24.38 (1.14)			
Islamic Bank Pre Test	40	18.53 (1.98)	–8.876	39	.000*
Islamic Bank Post Test	40	23.13 (1.93)			

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Table 3. T-test for the ROA variable

Source: Authors' calculation (2024).

Tests	N	Descriptive Statistics	Paired T-Test		
		M (Std. D)	T	df	Sig.(2-tailed)
Conventional Bank Pre-Test	40	2.467 (.061)	4.140	39	.000*
Conventional Bank Post Test	40	2.104 (.538)			
Islamic Bank Pre Test	40	1.204 (.332)	−6.960	39	.000*
Islamic Bank Post Test	40	1.827 (.270)			

During the COVID-19 pandemic, the credit disbursed had many assets with risk weights, so the risk of a decline in people's ability to pay was greater than before COVID-19. Thus, banks are required to maintain their capital capacity during the COVID-19 pandemic until COVID-19 occurs, which is indicated by the CAR value increasing. It can be concluded that the CAR value of conventional banks and Islamic banks after COVID-19 has increased, which statistically shows a difference between the performance before and after COVID-19. Safarda et al. (2023) state that Islamic banks have better performance in CAR and FDR. In addition, other studies show that the average CAR and FDR ratios before and during the Covid-19 pandemic did not differ significantly, indicating that the Covid-19 pandemic had no impact on the CAR ratio (Muhammad & Nawawi, 2022).

Based on Table 3, the results of the conventional bank t-test on profitability with the return on assets (ROA) variable are significant between before (M = 2,467, SD = 0.061) and after the occurrence of COVID-19 (M = 2,104, SD = 0.538), t (39) = 4.140, $p < 0.00$. The ROA value of conventional banks tends to decrease, statistically, there is a difference between before and after the occurrence of COVID-19. The results of the t-test on Islamic banks show a significant difference between before (M = 1.204, SD = 0.332) and after the occurrence of COVID-19 (M = 1.827, SD = 0.270), t(39) = −6.960, $p < 0.001$. Data on Islamic banks indicate that there has been an increase in profitability after COVID-19, higher than before COVID-19 occurred in Indonesia. According to theory, the higher the ROA, the greater the profitability a bank will achieve (Kusumastuti & Alam, 2019). So, it can be said that Islamic banks are quite effective in using assets to generate profits compared to conventional banks during the COVID-19 pandemic. Referring to Indonesian Bank regulations, the ideal ROA standard is 1.5%, so the average value for conventional banks and Islamic banks can be said to be good.

The difference from the ROA indicator in conventional banks is that the average value for the group before the COVID-19 pandemic was higher than the group after COVID-19, because the bank was able to generate profits efficiently. However, during the COVID-19 pandemic, the lockdown had an impact on the profitability of conventional banks in generating profits. On the other hand, the profitability of Islamic banks during the COVID-19 pandemic can generate profits, because people are more interested in making transactions at Islamic banks using a profit-sharing system. The public perceives that the profit-sharing system is more crisis-resistant than conventional banks, with an interest system, because during a crisis, it actually increases the interest burden they bear, as can be seen from the data in Table 3. Thus, during the COVID-19 pandemic, there were differences in profitability and ROA indicators between Islamic banks and conventional banks in Indonesia. Research shows that during the crisis, Islamic banks outperformed conventional banks in terms of ROA and NPL (Tanjung & Varianto, 2024).

Based on Table 4, the results of the t-test on the loan to deposit ratio (LDR) of conventional banks show that there is a significant difference between before (M = 91.72, SD = 2.44) and after the occurrence of COVID-19 (M = 82.34, SD = 2.54), t (39) = 15.421, $p < 0.001$. Meanwhile, the results of the t-test on Islamic banks showed a significant difference between before (M = 80.82, SD = 2.88) and after the occurrence of COVID-19 (M = 75.72, SD = 2.72), t (39) = 7.305, $p < 0.001$. The results of the Financing to deposit ratio (FDR) or loan to deposit ratio (LDR) data both have significant differences, and there is no increase in the data before and after the occurrence of COVID-19 in

Table 4. T-test for the LDR or FDR variable

Tests	N	Descriptive Statistic	Paired T-Test		
		M (Std. D)	T	df	Sig.(2-tailed)
Conventional Bank Pre Test	40	91.72 (2.44)	15.421	39	.000*
Conventional Bank Post Test	40	82.34 (2.54)			
Islamic Bank Pre Test	40	80.82 (2.88)	7.305	39	.000*
Islamic Bank Post Test	40	75.72 (2.72)			

Indonesia. Referring to Indonesian Bank regulations, the lower limit for LDR is 78%, and the upper limit for LDR is 92%. The average LDR value for conventional banks can be said to be getting better. However, referring to Bank Indonesia's provisions for a lower limit of 80% and an upper limit of 100%, the average value of FDR for Islamic banks is said not to be good.

The difference in financial performance of the LDR and FDR indicators for Islamic and conventional banks in Indonesia is that the average value before the COVID-19 pandemic was higher than after COVID-19. This happens to the LDR ratio because of the potential for an increase in the risk of bad credit due to a decrease in customers' ability to pay and a decrease in demand for banking credit after the outbreak of COVID-19. However, the decrease in LDR for conventional banks does not have a negative impact on banking ratio provisions. This affects the FDR ratio with an unfavorable assessment in achieving the bank's soundness level. Meanwhile, FDR, before COVID-19, had a good assessment because the low demand for financing from communities affected by COVID-19 was one of the factors that drove Islamic banks to allocate financing.

Thus, it is concluded that after the COVID-19 pandemic, the LDR of conventional banks and FDR of Islamic banks experienced a decline in the value of LDR and FDR. This came from a decrease in credit provided, which was lower than the decrease in total third-party funds. So, more attention must be paid to minimizing the risk of decreasing the efficiency of financial performance and banking productivity. In other studies, conventional banks show superior performance in ROA, BOPO, NIM, and LDR ratios (Fauzi & Fithria, 2023).

Based on Table 5, the results of the t-test show that there is no significant difference in the average value of the ratio of operating costs to operating income (BOPO) for conventional banks before ($M = 80.64$, $SD = 2.28$) and after the COVID-19 pandemic ($M = 82.61$, $SD = 7.59$), $t(39) = -1.561$, $p = 0.127$. The test results indicate that after the COVID-19 pandemic, there was no difference in the BOPO ratio in terms of increasing data. This is due to an increase in operational expenses, which indicates that the level of efficiency and ability of banks in carrying out their operational activities has not improved after the COVID-19 pandemic. Meanwhile, the results of the BOPO ratio in Islamic banks were different between before ($M = 88.00$, $SD = 7.59$) and after the COVID-19 pandemic ($M = 82.39$, $SD = 4.11$), $t(39) = 2.510$, $p < 0.001$, until the value decreased. The average BOPO ratio is statistically different. Judging from the operational performance, the BOPO ratio in Islamic banks shows good performance. So, the average value of conventional banks and Islamic banks with reference to the standard BOPO ratio is 94% for Indonesian banks, so it can be said to be very good.

There is no difference in the BOPO ratio in conventional banks because there is no influence during the COVID-19 pandemic. During the

Table 5. T-test for the BOPO variable

Tests	N	Descriptive Statistics	Paired T-Test		
		M (Std. D)	t	df	Sig.(2-tailed)
Conventional Bank Pre Test	40	80.64 (2.28)	–1.561	39	.127* (No difference)
Conventional Bank Post Test	40	82.61 (7.59)			
Islamic Bank Pre Test	40	88.00 (13.8)	2.510	39	.016* (There is a difference)
Islamic Bank Post Test	40	82.39 (4.11)			

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COVID-19 pandemic, banks faced challenges in managing operational costs because lockdown regulations had a negative impact on the banks' ability to make a profit. banking experienced an increase in operational expenses that were higher than operating income. This indicates that the level of efficiency and ability of banks in their operational activities after the COVID-19 pandemic is not improving.

This is the opposite of the BOPO ratio in Islamic banks, with the average value before and after the COVID-19 pandemic. Islamic banks are more efficient in optimizing profits and meeting operational income, and reducing operational costs incurred by banks compared to before the COVID-19 pandemic. So, it can be concluded that the BOPO of conventional banks remains stable compared to Islamic banks because there are differences after the COVID-19 pandemic occurred in Indonesia. However, Islamic banks are still less competitive with conventional banking in terms of efficiency because conventional banks tend to be more modern, and the quantity and quality of human resources are more optimal than for Islamic banks. The convenience of banking services to meet customer needs in carrying out their transaction activities is an advantage for consumers (Kurniawan, 2022). This is very useful because there are regulatory restrictions during the COVID-19 pandemic. This was also revealed by Febriandika et al. (2023b). The use of technology does not have a significant positive impact, but Islamic banks can face the COVID-19 outbreak crisis well and tend to have a significant difference in average performance. High BOPO indicates the company's inefficiency in managing costs which causes performance to decline (Mustika & Abidin, 2023).

CONCLUSION

Study aims to analyze the differences in the performance of conventional banks and Islamic banks before and after the COVID-19 pandemic in Indonesia. The observation period in this study is from June 2016 to March 2019 and from March 2020 to June 2023. The results of the one-sample Kolmogorov-Smirnov test on conventional banks show that CAR (0.626), ROA (0.832), FDR (0.907), and BOPO (0.073) mean that all ratios are normally distributed. Then, Islamic banks show the CAR ratio (0.224), ROA (0.248), FDR (0.839), and BOPO (0.723) between before and after the COVID-19 pandemic in Indonesia, so it is concluded that all ratios are normally distributed. The results of the paired sample t-test on conventional banks before and after COVID-19 showed that CAR (0.001), ROA (0.001), and FDR (0.001) were different, while BOPO (0.127) was not different. Then, Islamic banks showed that CAR (0.001), ROA (0.001), FDR (0.001), and BOPO (0.016) were different before and after COVID-19.

The variables used in this study are Capital Adequacy Ratio (CAR), Return on Asset Ratio (ROA), Operational Cost to Income (BOPO), and Financing to Deposit Ratio (FDR). This study aims to show whether there is a distinction between the performance of conventional banks and Islamic banks before and after the COVID-19 pandemic in Indonesia. The results of the graphic investigation indicate that there are financial ratios that have experienced an increase in performance, to be specific the CAR, ROA, and BOPO proportions, whereas the FDR or LDR tend to encounter a decrease in performance after COVID-19. There was an increase and decrease between before and after the outbreak of the COVID-19 pandemic in each proportion, which is still in the category with healthy and good banking qualification.

The results of the analysis of different tests on the financial performance of conventional banks and Islamic banks show differences between before and after the COVID-19 pandemic occurred in Indonesia in the CAR, ROA, and FDR/LDR ratios. Meanwhile, there is no difference in the BOPO ratio in conventional banks that can maintain their performance. This indicates an increase or decrease in the efficiency of the influence before and after the COVID-19 pandemic.

AUTHOR CONTRIBUTIONS

Conceptualization: Imron Rosyadi, Nur Rizqi Febriandika, Nanda Nur Aisyah.
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Writing – reviewing & editing: Nur Rizqi Febriandika, Mauizhotul Hasanah.

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REFERENCES

1. Alabbad, A., & Schertler, A. (2022). COVID-19 and bank performance in dual-banking countries: an empirical analysis. *Journal of Business Economics,* 92(9). https://doi.org/10.1007/s11573-022-01093-w
2. Aldeen, K. N., Sri Herianingrum, & Agawany, Z. M. W. (2020). Islamic banks vs conventional banks in Syria: An analysis on financial performances. *Shirkah: Journal of Economics and Business, 5*(1), 3-42. Retrieved from https://scispace.com/pdf/islamic-vs-conventional-banks-in-syria-analysis-on-financial-1ai1db7ets.pdf
3. Ashraf, D., Rizwan, M. S., Adiwibowo, D. H., & Yusan, R. I. (2022). Loan Portfolio Composition of Islamic and Conventional Banks Pre- and Post-COVID-19 Pandemic? Case of Indonesia. *Journal of Islamic Monetary Economics and Finance, 8*(3), 407-428. https://doi.org/10.21098/jimf.v8i3.1561
4. Blanas, S., & Oikonomou, R. (2023). COVID-induced economic uncertainty, tasks and occupational demand. *Labour Economics, 81*. https://doi.org/10.1016/j.labeco.2023.102335
5. Demir, E., & Danisman, G. O. (2021). Banking sector reactions to COVID-19: The role of bank-specific factors and government policy responses. *Research in International Business and Finance, 58*. https://doi.org/10.1016/j.ribaf.2021.101508
6. Fauzi, I., & Fithria, A. (2023, August). Analisis Perbandingan Kinerja Keuangan Perbankan Syariah dan Perbankan Konvensional Selama Pandemi Covid-19. In *UMMagelang Conference Series* (pp. 42-60). Retrieved from https://journal.unimma.ac.id/index.php/conference/article/view/9947
7. Febriandika, N. R., Hakimi, F., Awalliyah, M., & Yayuli. (2023a). Contagion and spillover effects of global financial markets on the Indonesian Sharia Stock Index post-COVID-19. *Investment Management and Financial Innovations, 20*(3), 35-47. https://doi.org/10.21511/imfi.20(3).2023.04
8. Febriandika, N. R., Harun, Hakimi, F., & Masrizal. (2023b). Determinants of consumer adoption of Islamic mobile banking services in Indonesia. *Banks and Bank Systems, 18*(4), 30-43. https://doi.org/10.21511/bbs.18(4).2023.04
9. Febriandika, N. R., Wati, R. M., & Hasanah, M. (2023c). Russia's invasion of Ukraine: The reaction of Islamic stocks in the energy sector of Indonesia. *Investment Management and Financial Innovations, 20*(1), 218-227. https://doi.org/10.21511/imfi.20(1).2023.19
10. Ghouse, G., Ejaz, N., Bhatti, M. I., & Aslam, A. (2022). Performance of islamic vs conventional banks in OIC countries: Resilience and recovery during Covid-19. *Borsa Istanbul Review, 22,* S60-S78. https://doi.org/10.1016/j.bir.2022.11.020
11. Khlystova, O., Kalyuzhnova, Y., & Belitski, M. (2022). The impact of the COVID-19 pandemic on the creative industries: A literature review and future research agenda. *Journal of Business Research,*

http://dx.doi.org/10.21511/bbs.20(2).2025.03

139, 1192-1210. https://doi.org/10.1016/j.jbusres.2021.09.062

12. Kurniawan, D. (2022). Initiating the Establishment of Digital Banks in Indonesia: A Juridical Study. *Journal of Transcendental Law, 4*(1), 1-15. https://doi.org/10.23917/jtl.v4i1.17311

13. Kusumastuti, W. I., & Alam, A. (2019). Analysis of Impact of CAR, NPF, BOPO on Profitability of Islamic Banks (Year 2015–2017). *Journal of Islamic Economic Laws, 2*(1), 30-59. https://doi.org/10.23917/jisel.v2i1.6370

14. Maliszewska, M., Mattoo, A., & van der Mensbrugghe, D. (2020). The Potential Impact of COVID-19 on GDP and Trade: A Preliminary Assessment. *The Potential Impact of COVID-19 on GDP and Trade: A Preliminary Assessment.* https://doi.org/10.1596/1813-9450-9211

15. Muhammad, R., & Nawawi, M. (2022). Kinerja keuangan bank syariah di indonesia sebelum dan selama pandemi covid-19. *El-Mal: Jurnal Kajian Ekonomi & Bisnis Islam, 3*(5), 854-867. Retrieved from https://journal.laaroiba.com/index.php/elmal/article/view/1133/1058

16. Platt, H. D., & Platt, M. B. (2002). Predicting corporate financial distress: Reflections on choice-based sample bias. *Journal of Economics and Finance, 26*(2), 184-199. https://doi.org/10.1007/BF02755985

17. Safarda, R. N., Wahyudi, R., & Mubarok, F. K. (2023). Islamic and conventional banking: a comparison of financial performance during the Covid-19 pandemic. *Journal of Islamic Economic and Business Research, 3*(1), 83-96. https://doi.org/10.18196/jiebr.v3i1.113

18. Serly, V., Septiari, D., & Betavia, A. E. (2020). Analyzing Performance of Islamic and Conventional Bank in Southeast Asia: The Firm Size View. *JIA (Jurnal Ilmiah Akuntansi), 5*(2), 391-406. Retrieved from https://ejournal.undiksha.ac.id/index.php/JIA/article/view/28981

19. Shah, S. S. H., Gherghina, Ş. C., Dantas, R. M., Rafaqat, S., Correia, A. B., & Mata, M. N. (2023). The Impact of COVID-19 Pandemic on Islamic and Conventional Banks' Profitability. *Economies, 11*(4), 1-17. https://doi.org/10.3390/economies11040104

20. Shen, H., Fu, M., Pan, H., Yu, Z., & Chen, Y. (2020). The Impact of the COVID-19 Pandemic on Firm Performance. *Emerging Markets Finance and Trade, 56*(10), 2213-2230. https://doi.org/10.1080/1540496X.2020.1785863

21. Tanjung, M., & Varianto, G. (2024). The Comparative Performance of Sharia and Conventional Banks during the Pandemic: Analysis of Indonesian Banks. *Jurnal Aplikasi Manajemen, 22*(1), 138-149. https://doi.org/10.21776/ub.jam.2024.022.01.11

22. Viverita, V., Bustaman, Y., & Danarsari, D. N. (2022). Liquidity Creation by Islamic and Conventional Banks during COVID-19 Pandemic. *Heliyon, 9*(4), e15136. https://doi.org/10.1016/j.heliyon.2023.e15136

23. Wahyuni, S., Pujiharto, P., & Handayani, E. (2023). How the Rules of no.11/POJK.03/2020 Banking Restructuring Policy Improve Financial Performance? (Empirical Study of Islamic Banks in Indonesia). *Review of Economics and Finance, 20*(11), 895-901. https://doi.org/10.55365/1923.x2022.20.101

24. Wastuti, W., & Hasan, A. (2022). Financial performance of Islamic Commercial Banks before and during the Covid-19 pandemic in Indonesia. *Indonesian Interdisciplinary Journal of Sharia Economics (IIJSE), 5*(2), 549-571. Retrieved from https://www.e-journal.uac.ac.id/index.php/iijse/article/view/2135

25. Widarjono, A., Alam, M., & Rafik, A. (2023a). The Dynamic Link Between Islamic and Conventional Deposit Rates in a Dual Banking System. *ISRA International Journal of Islamic Finance, 15*(1), 91-108. https://doi.org/10.55188/ijif.v15i1.487

26. Widarjono, A., Suseno, P., Utami Rika Safitri, D., Yaseen, A., Azra, K., & Nur Hidayah, I. (2023b). Islamic bank margins in Indonesia: The role of market power and bank-specific variables. *Cogent Business and Management, 10*(2). https://doi.org/10.1080/23311975.2023.2202028

27. Xiazi, X., & Shabir, M. (2022). Coronavirus pandemic impact on bank performance. *Frontiers in Psychology, 13*. https://doi.org/10.3389/fpsyg.2022.1014009