

Islamic Banks and Conventional Banks in Indonesia, who is more resilient towards the pandemic crisis?

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Abstract. This paper presents a comparative analysis of Islamic banks and conventional banks in Indonesia using monthly data retrieved from OJK from January 2015 to May 2024. The method used is Mann-Whitney for non-parametric analysis to compare two groups whether they are different or indifferent. This is because the data does not fulfill the assumptions of normality and homogeneity, even though graphically it does. Return on Assets is used as a measurement parameter of the banking performance of both Islamic and Conventional banks. The data was then tested to see the resilience of their performance during the Pandemic crisis using dummy analysis. The results show that in general, Conventional Banks have better performance compared to Islamic Banks. However, separately analyzed, Islamic Banks performed better during the COVID-19 pandemic, while the performance of Conventional Banks worsened due to the presence of the pandemic crisis. This study gives insightful information about the banking picture in Indonesia. Thus it can be used as a reference for the government to take appropriate policies to enhance the development of both Islamic and conventional banks.

Keywords: Islamic Banks, Conventional Banks, Financial Performance, the Pandemic Crisis, Mann-Whitney U-Test.

1 Introduction

Indonesia is the world's largest Muslim-majority country, currently experiencing significant economic growth and financial inclusion after recovering from the pandemic crisis. With over 230 million Muslims, the nation represents a considerable market for financial services, especially Islamic financing to meet the need for the religious aspect. The emergence of Islamic banking in Indonesia is not merely a trend but a necessity that aligns with the country's demographic, and characteristics.

In recent years, the Indonesian government has recognized the potential of Islamic banking to foster inclusive economic growth, reduce poverty, and enhance financial stability. The need for Islamic banking in Indonesia can be understood for some reasons, for instance with a Muslim population exceeding 85%, there is a substantial demand for financial products that adhere to Islamic principles. Conventional banking services often fail to meet the religious

needs of this market segment. Furthermore, Islamic banking has the potential to bring millions of unbanked and underbanked Indonesians into the formal financial system. By offering products that align with their values, Islamic banks can attract those who might avoid conventional banking.

According to the Indonesia Financial Services Authority (OJK), currently, there are 14 Islamic Banks in Indonesia, and 19 conventional banks that offer Sharia business units while Islamic Credit banks (BPR Syariah) account for 173 units. The growth of Islamic banking is supported by the increase in the awareness of Islamic principles among Muslims, and the demands keep growing for Islamic financing products and services. The Islamic bank assets have grown significantly and it has an important role in Indonesia's economy. The contributions include providing home financing, and financing access for small and medium enterprises.

This study aims to see the Islamic Banks' performance as compared to its counterparts, especially, in terms of their resilience in facing the pandemic crisis. The findings can be used as insightful information for the government to take policies to improve the development of Islamic banking in Indonesia as its existence is promising as a significant contribution to the Indonesian economy.

2 Literature Review

Islamic and Conventional banking are fundamentally different, for example, Islamic banking is run based on Sharia (Islamic law), which prohibits interest (riba), excessive uncertainty (gharar), and investments in haram (forbidden) activities like alcohol, gambling, and pork-related businesses. Islamic bank also operates on principles of risk-sharing, ethical investments, and social justice. As contrary, conventional banking operates on secular financial principles where earning interest and making a profit is the primary goal through transactions such as loans, and all financial products [1]. There are no religious or ethical restrictions on how profits are made, as long as they comply with local laws and regulations. Moreover, [2] underlined that conventional banks exist on debt structures that is mainly guided by human reason.

Some literature documented a comparison of Islamic and conventional banking performance using various approach. For example, The Maqashid Sharia Index known as PMMS proposed by [3], this measure incorporates a numbers of sharia objectives that should be addressed by the Islamic bank rather than mainly refers financial measures. This model then tested by [2] for the case of Malaysia, the study found that Islamic banking in Malaysia perfumes better when measure using PMMS model than when they are measured using conventional banking performance parameters. Some evidence shown by a successful achievement of Islamic banking in the case of Malaysia where the Islamic capital and money market are considered as the most developed in the Muslim world, moreover, Malaysia also considered as the first country to issue the global sukuk Sovereign bond in 2002 and by August 2006, Malaysia launch Malaysia International Islamic Financial Centre (MIFC). Despite a significant growth and increasing demand on Islamic financial products, studies reported that on average the performances of Islamic banking are behind its counterpart. The significant development of Malaysia Islamic banking also reported by [4] stated that Malaysian banks are becoming more efficient and less dangerous due to the rise of Islamic banking. As the sector's share of Islamic banking grows, the efficiency-risk trade-off appears to have promise. Despite the fact that Islamic bank has lower profitability than conventional banking. Meanwhile, using difference approach, [5] documented for the period 2006-2011, among the Islamic banks

operating in Malaysia, the Islamic foreign banks were more efficient than Islamic domestic banks in terms of technical and allocative efficiency.

Furthermore, [6] investigated for the case of Indonesia 2014-2017 using the Maqashid Sharia Index developed by [3] and found that the highest score is Bank Panin Syariah (BPS), Bank Syariah Bukopin, and Bank Muamalat Indonesia. This result supported the previous finding [7] that also reported Panin bank as bank with the best performance using sharia index while the highest of Profitability Index is Maybank Syariah in period 2011-2014.

In Pakistan using data from 2010-2017, Islamic banks outperform conventional banks in terms of return on assets and board independence ratios, but Islamic banks perform better in terms of net interest margin, log of loan loss reserve to gross loan, log of liquid assets to total deposits, log of equity over net loan, and board size ratios. Both varieties of banks are equal in size [8].

In terms of its resilience, the study by [9] documented that the performance of Islamic banks in Indonesia is significantly affected by non-performing finance and inflation. In addition, the performance of Islamic banks has been relatively better after the crisis. Moreover, other studies reported that for the case of Indonesia, Islamic banks proved more resilient than their counterparts when facing the financial crisis [10], [11], [12] [13] Meanwhile, the presence of Covid-19 also given shocks to the banking industry. [14] reviewed this effect and informed that Islamic banking performed better than conventional banking, both before and during the Covid-19 pandemic using quarterly data from 2019-2021. The COVID-19 pandemic caused a significant shock to conventional banking, while it only give a slightly shock to Islamic banking. Both have some experiences, but the shocks are higher for conventional banks. This study will confirm using a longer range of data, and different methods.

3 Methodology

This research aims to see the banking performance of Islamic and Conventional Banks in Indonesia. The data used in this analysis is a time series monthly data from January 2015 to May 2024, thus there are 113 observations. The data is retrieved from the Indonesia Financial Services Authority (OJK). Return on Assets (ROA) is used to measure financial performance. In the first step, the data is analyzed using Mann-Whitney non-parametric analysis to see whether Islamic bank's performance differs from conventional banks. Non-parametric analysis is used instead of ANOVA as the data does not meet the assumption of normality and homoscedasticity. Furthermore, to see which bank has better performance, the regression with dummy analysis is employed. The investigation continued to see the resilience in facing the crisis of the COVID pandemic.

1.1 Mann-Whitney Test

Mann-Whitney U test is the non-parametric alternative test to the independent sample t-test. It is a non-parametric test used to compare two sample means that come from the same population, and used to test whether two sample means are equal or not. Usually, the Mann-Whitney U test is used when the data is ordinal or when the assumptions of the t-test are not met.

The hypothesis is that

Ho: there is no difference in performance of Islamic and Conventional Bank

Ha: Islamic Bank and Conventional bank have different performance

1.2 Regression with Dummy

This model uses a dummy variable to see which bank performs better. The equation is:

$$ROA = \alpha + \beta \text{Dummy1} \quad (1)$$

$$\text{Where Dummy1} = \begin{cases} 1 & \text{if Islamic Bank} \\ 0 & \text{for Conventional Bank} \end{cases}$$

1.3 Regression with variable crisis

Two equations for each bank are formulated to see the influence of the pandemic crisis on the bank's performance, or in other words, to see which banks are more resilient in facing the shock.

$$ROA_{IB} = \alpha + \beta \text{Dummy2}, \quad (2)$$

$$\text{Where Dummy2} = \begin{cases} 1 & \text{if Covid} \\ 0 & \text{if no Covid} \end{cases}$$

$$ROA_{CB} = \alpha + \beta \text{Dummy3}, \quad (3)$$

$$\text{where Dummy3} = \begin{cases} 1 & \text{if Covid} \\ 0 & \text{if no Covid} \end{cases}$$

4 Result and Discussion

Data used in this study is data of ROA of Islamic Banks and Conventional Bank in Indonesia from January 2015 to May 2024 in the form of monthly data retrieved from OJK. To answer the research objective, this study employs analysis of compare means using a measurement tool called the Mann-Whitney test for non-parametric data. This approach is utilized because the requirements of normality and homogeneity of data failed to be met. Figure 1 depicts the data that follows the regression line indicating that the data is normal, however, statistically proven the data is not normally distributed as depicted in Table 1.

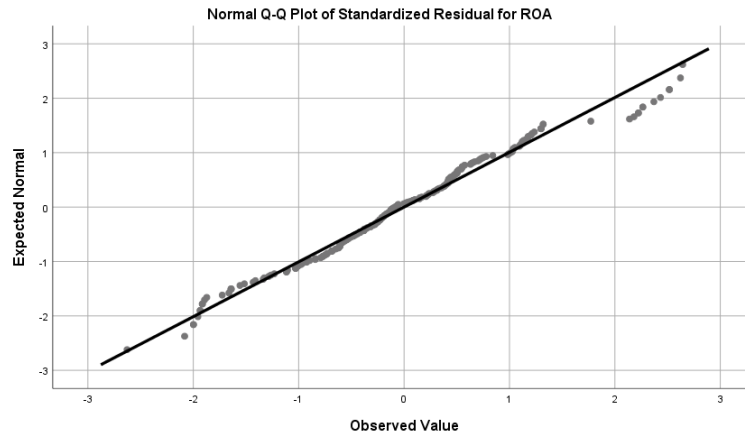


Fig.1. Normality Plot of ROA

Table 1. Normality test

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Standardized Residual for ROA	.067	226	.014	.982	226	.005

a. Lilliefors Significance Correction

Table 2 represents the homogeneity test, it shows that the data does not meet the requirement of homogeneity. Therefore, this study uses a non-parametric measurement Mann-Whitney U test.

Table 2. Test of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
ROA	Based on Mean	43.203	1	224	.000
	Based on Median	38.711	1	224	.000
	Based on Median and with adjusted df	38.711	1	193.045	.000
	Based on trimmed mean	42.892	1	224	.000

The Mann-Whitney U test is designed to see whether the two groups are significantly different. This analysis is similar to the Analysis of Variance (ANOVA). The description of the data is depicted in Table 3.

Table.3 Descriptive of Statistic

BANK	MEAN	STD.DEVIATION	N
Islamic Bank	1.57	0.63	113
Conventional Bank	2.44	0.35	113
Total	2.01	0.67	226

The data of both Islamic and Conventional Banks were observed from January 2015 to May 2024, so it covered 113 observations.

Table 4. The Mann-Whitney Test to Compare Bank's Performance (ROA)

Mann-Whitney U	1494.5
Wilcoxon	7935.5
Z	-9.951
Asymp. Sig (2-tailed)	0.000

With the Null Hypothesis, there is no difference in terms of performance between Islamic Banks and Conventional Banks, and the Asymptotic significance is 0.000 less than 5 % alpha, therefore it can be concluded that the null hypothesis is rejected, in other words, Islamic Banks has difference performance with its counterpart.

The above analysis successfully confirms that the two Banks are different, however, it is yet to answer which bank has better performance, thus dummy analysis is utilized to address this issue. The equation therefore is stated in (4)

$$ROA = 2.448 - 0.877 \text{ BANK} \quad (4)$$

$$\text{Where BANK} = \begin{cases} 1 & \text{for Islamic Bank} \\ 0 & \text{for Conventional Bank} \end{cases}$$

From equation (4), it can be seen that Conventional Banks perform better than Islamic Banks based on Return on Assets. The regression coefficient represents the number of differences. Furthermore, the study also examines the resilience of the two banks in facing the crisis of Pandemic COVID. Islamic Banks and Conventional Banks are separately tested, and the relationship is presented in the following equations:

$$ROA_{\text{Islamic Banks}} = 1.840 - 0.429 \text{ Crisis} \quad (5)$$

$$ROA_{\text{Conventional Banks}} = 2.226 + 0.353 \text{ Crisis} \quad (6)$$

$$\text{Where Crisis} = \begin{cases} 1 & \text{for No Crisis} \\ 0 & \text{for pandemic Crisis} \end{cases}$$

To simplify, the results are summarized in Table. 5

Table 5. Regressions Summary

ROA Islamic Banks= 1.840-0.429 Crisis	ROA Islamic Banks=1.84 (if Crisis) ROA Islamic Banks=1.411 if (no Crisis)	Islamic banks perform better when there is a Crisis
ROA Conventional Banks= 2.226+0.353 Crisis	ROA Conventional Banks= 2.226 (if Crisis) ROA Conventional Banks = 2.579 (no crisis)	During the pandemic, Conventional banks perform lower

The coefficients are significant at one percent levels for constant and the regression coefficients. The number of coefficients represents the difference between the Pandemic Covid Crisis and no Crisis. For Islamic Banks, during the Pandemic crisis, bank performance was better than before or after the pandemic by 0.429 percent. In contrast, even though in general the performance of conventional banks is better than the Islamic banks, surprisingly, the Pandemic crisis made it worse by 0.353 percent.

5 Conclusion

This study reviewed the performance of the banking industry in Indonesia using monthly data retrieved from OJK. The data was analyzed using the Mann-Whitney U test for comparing the mean of ROA and showed that these two banks are different. To see the degree of differences, the data then tested using a dummy variable. Overall conventional banking performed better, however during COVID-19, Islamic banking had better performance compared to before the crisis, while conventional banking got worse when the crisis of the pandemic occurred. In a nutshell, the government needs to stimulate Islamic bank by giving some regulations supporting the Islamic banking industry to meet the financial products demanded by the customers, especially for Muslims in Indonesia.

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