

## COMPARISON OF BANKRUPTCY RISK OF SHARIA GENERAL BANK IN ASIA

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**Abstract:** This study aims to compare the risk of bankruptcy in the Islamic Commercial Bank in Asia. The sample used in this study is five Islamic Commercial Bank in five countries in the Asian continent in 2014-2018. The method used in measuring bankruptcy rates is the Altman z score bankruptcy analysis. This study's tests are the normality test and the different test with the Kruskal-Wallis tests followed by the Mann Whitney Post Hoc Test. This study indicates that the average z score that measures the bankruptcy of Islamic Commercial Bank in Asia is worth 6.6 points. This value shows that Islamic banks in Asia are included in healthy companies and far from bankruptcy. Based on Kruskal Wallis Nonparametric Test indicates that there are significant differences from the level of the bankruptcy of Islamic Commercial Bank in Asia.

**Keywords:** Bankruptcy, Altman z score, Islamic Commercial Bank

**Abstrak:** Penelitian ini bertujuan untuk membandingkan risiko kebangkrutan Bank Umum Syariah di Asia. Sampel yang digunakan dalam penelitian ini adalah lima Bank Umum Syariah di lima negara yang ada di Benua Asia pada tahun 2014-2018. Metode yang digunakan dalam pengukuran tingkat kebangkrutan adalah analisis tingkat kebangkrutan Altman *z score*. Pengujian yang dilakukan dalam penelitian ini adalah Uji Normalitas dan Uji Beda Kruskal-Wallis dilanjutkan dengan Uji Post Hoc Mann Whitney. Hasil dalam penelitian ini menunjukkan bahwa rata-rata nilai *z score* yang mengukur tingkat kebangkrutan Bank Umum Syariah di Asia adalah senilai 6,6 poin. Nilai tersebut menunjukkan bahwa Bank Umum Syariah di Asia tergolong dalam perusahaan yang sehat dan terbebas dari risiko kebangkrutan. Berdasarkan Uji Non Parametrik Kruskal Wallis menunjukkan bahwa terdapat perbedaan yang signifikan dari tingkat kebangkrutan Bank Umum Syariah di Asia.

**Kata Kunci:** Kebangkrutan, Altman z score, Bank Umum Syariah

## INTRODUCTION

Banking institutions are an essential factor in economic development. Therefore banks play a very strategic role in the economy (Sochih, 2009: 82-83). Besides, banking also has a significant role in the era of economic globalization, where banks cannot be separated from the business world (Hakim, 2012: 23-24). The performance of the banking industry can be one indicator of a country's economic growth. If the banking industry is in excellent condition, then the country's economic growth is also profitable. Banking performance can be analyzed through financial statements that reflect banks and the banking industry (Indonesian Institute of Accountants, 2012). Based on data from the 2019 Islamic Finance Country Index Score, it can be seen that the development of the Islamic financial industry, which includes Islamic banking, has increased from year to year. It is undeniable that Indonesia has been ranked number one globally and has surpassed Iran and Malaysia in developing Islamic finance with 81.93 points.

Based on a Global Islamic Finance Report 2019, Indonesia managed to move up five ranks and displace Malaysia to occupy that position in the last three years. Based on the report, Indonesia's ranking increase in the 2019 Islamic Finance Country Index is due to government support in developing domestic sharia finance, such as establishing the National Sharia Finance Committee (KNKS), issuing related regulations issuing sharia-based services. Also, the private sector plays a significant role in this regard. For example, Bank Syariah Mandiri has succeeded in becoming a significant player in providing Islamic financial services in Indonesia. The rapid growth of Islamic banking in Indonesia is in line with the high development of Islamic financial industry assets in Indonesia. It cannot be denied that Islamic banking is in second place as the largest contributor to the Islamic financial industry's assets in Indonesia.

Furthermore, Islamic banking development does not only occur in Indonesia, but this also occurs in several countries in other Asian continents. This is in line with the Islamic Finance Development Report 2018, which shows ten countries in Asia have the fastest development of the Islamic financial market. Based on data from the 2018 Islamic Finance Development Report, Indonesia is one of the countries with the fastest growth in Islamic finance. Indonesia is quite satisfied in the 50th position out of 131 countries included in the 2018 Islamic Finance Development Index. The first position is occupied by Malaysia with a score of 132 and followed by Bahrain with 74. Simultaneously, the United Arab Emirates and

Pakistan are ranked 3 and 4 with ratings 71 and 59. Meanwhile, Saudi Arabia must be satisfied to be in position 5 with a value of 56. In the development of Islamic finance globally, the Asian region, as one of the regions with the largest Muslim population globally, can make the most significant contribution in Islamic world finance. Based on data from the 2019 Islamic Financial Services Industry Stability Report, Asia is one of the largest contributing regions in the world of Islamic finance.

**Table 1. Global Sharia Financial Assets by Country Group  
 (in Billion USD)**

<b>Regional</b>	<b>Syariah Banking</b>	<b>Sukuk</b>	<b>Syariah Investment</b>	<b>Insurance Contribution</b>	<b>Total</b>
Asia	266,1	323,2	24,2	4,1	617,6
GCC	704,8	187,9	22,7	11,7	927,1
MENA (Except GCC)	540,2	0,3	0,1	10,3	550,9
Afrika (Except South Africa)	13,2	2,5	2,5	0,01	17,2
Others	47,1	16,5	16,5	-	76,7
<b>Total</b>	<b>1.571,3</b>	<b>530,4</b>	<b>61,5</b>	<b>27,7</b>	<b>2,190</b>

Source: Islamic Financial Services Industry Stability Report 2019

Indonesia is one of the countries with the largest Muslim population globally, but, according to data from the Indonesian Financial Services Authority (OJK), this is not accompanied by the development of the Islamic banking market share in Indonesia, which only touched 6.01 percent in October 2019.

Based on data from the Indonesian Central Statistics Agency, the majority of Indonesia's population is Muslim, with a total of 207.17 million people, equivalent to 87.18 percent of the total population, reaching 237.64 million people in 2010. Meanwhile, Indonesia's population is Christian (Christian) ) in 2010, with as many as 16.58 million people (6.96 percent) and was the second-highest. Furthermore, the Catholic community reached 6.9 million, with 2.91 percent of the total population. In Islamic banking, several indicators reflect the soundness of the bank itself. One of these indicators is through an assessment of how high a bankruptcy bank is. Bankruptcy is a financial difficulty so severe that the company is unable to carry out its operations. Bankruptcy is defined as the inability of a company to pay its

financial obligations when due, which causes bankruptcy or financial liquidity difficulties, which are the beginning of bankruptcy. The problem of bankruptcy in a company, including for Islamic banks, is a risk that cannot be avoided, but this risk can be minimized or prevented (Rudianto, 2013: 56-57).

According to Gamayuni (2009: 4-5), there are various analysis models in predicting bankruptcy of a company, which consists of the Altman z score model, Springate's Model, Datastream's model, Fulmer Model, CA score, Ohlson Model, Neural Network model, TR model, and Zmijewski Model. This research uses the Altman Z-Score model proposed by Edward I. Altman in 1968. This analysis model uses specific ratios as predictive models using Multiple Discriminant Analysis techniques (Altman, 2000: 7-8).

According to Elhayati (2017: 21), in his study of bankruptcy predictions with the Altman z score model in Islamic Commercial Banks in Indonesia in the 2013-2015 period, Bank Syariah Mandiri, BNI Syariah, and BRI Syariah had z scores of 2.90. This shows that these banks are far from the risk of bankruptcy, although it does not rule out the possibility that the value will decrease if accompanied by less than maximum bank performance.

One study conducted by Kusdiana (2014: 85-94) analyzed the CAMEL model, and Altman z score in predicting bankruptcy of commercial banks in Indonesia showed that the Altman z score model showed higher prediction accuracy in predicting bankruptcy of commercial banks in Indonesia. This study's results became the basis for researchers choosing the Altman z score model as an analysis of bankruptcy predictions in this study.

Based on a report from the Deposit Insurance Corporation (LPS) announcing that as many as eight Sharia People Financing Bodies (BPRS) out of a total of 100 BPRS and BPR registered with the LPS, have been and are undergoing a liquidation process throughout 2009 to 2019. Another unusual case is the fall of Barings Banks that is 23 years old, because of their negligence in managing operational risk. The Bank Barings collapse occurred due to fraud committed by one of the employees who was considered to have intelligence in managing customer funds. Hence, the bank gave too much authority to employees who made it easy to carry out various transaction manipulations. As a result, Barings Bank must be sold only within three years to Bank ING (Netherlands) for only one pound per share (Wahyudi, 2013: 88-90). Besides, Ihlas Finance's bankruptcy in Turkey in 2000 due to exchange rate volatility with excessive volatility proves that Islamic banks remain a business agreement that remains

vulnerable if faced with a crisis. Based on data from the 2019 Global Bankruptcy Report in Indonesia, there have been various bankruptcy cases over three years, starting from 2016 to 2018, which hit various companies and financial institutions in Indonesia. The highest number occurred in 2017 810 companies declared bankruptcy.

**Table 2. List of Sharia Rural Banks which have and are currently undergoing a Liquidation Process throughout 2009-2019**

No	Name of Bank	Region	CIU Date	Position
1	PT BPRS Babussalam	Garut, Jawa Barat	01st May 2009	Liquidated
2	PT BPRS Syarif Hidayatullah	Cirebon, Jawa Barat	29 <sup>th</sup> July 2011	Liquidated
3	PT BPRS Hidayah Jakarta	Cengkareng, Jakarta Barat	19 <sup>th</sup> Juni 2011	Liquidated
4	PT BPRS Al Hidayah	Pasuruan, Jawa Timur	25 <sup>th</sup> April 2016	Liquidated
5	PT BPRS Shadiq Amanah	Jawa Barat	1st September 2016	Liquidated
6	PT BPRS Jabal Tsur	Jawa Timur	21st January 2019	Liquidated
7	PT BPRS Safir Bengkulu	Bengkulu	30 <sup>th</sup> January 2019	Liquidated
8	PT BPRS Muamalat Yotefa	Papua	15th May 2019	Liquidated

Source: Deposit Insurance Agency

Based on Table 2. it can be seen that in Indonesia, there have been eight cases of bankruptcy of the Islamic People's Financing Bank (BPRS) from 2009 to May 2019. A total of Five BPRS have been liquidated. As many as three BPRS consisting of PT BPRS Jabal Tsur, PT BPRS Safir Bengkulu, and BPRS Muamalat Yotefa are still in the process of liquidation. Moreover, Indonesia's Sharia Banking industries must not turn a blind eye to various risks that may occur in sharia banking. Thus, a comprehensive analysis is needed to find out more about the comparison of bankruptcy risks at Sharia Commercial Banks in Indonesia and other Sharia Commercial Banks in Asia. This research related to the Bankruptcy Risk Comparison of Islamic Commercial Banks in Asia needs to be further studied. They are considering that banking, including Islamic banking, is the artery of a country's economy. The growing global sharia financial industry accompanied by increasingly uncertain global economic turmoil has encouraged Islamic banks to maintain their existence from the threat of possible bankruptcy risks.

## METHOD

The population in this study are five Sharia Commercial Banks found in Asia. This study's sample selection technique is a purposive sampling technique that is a sampling technique for data sources with specific considerations (Sugiyono, 2015: 87). Considerations in determining the sample in this study are Islamic Commercial Banks (BUS) in Asia. Their countries are ranked in the top five in the development of Islamic finance according to the Islamic Finance Country Index (IFCI) 2019 found in Indonesia, Malaysia, Iran, Saudi Arabia, and Brunei Darussalam. Second, Sharia Commercial Banks with Top 5 based on each country's most considerable total assets as of December 2018. Third, Sharia Commercial Banks publish Financial Statements on their official websites during the study period. Fourth, financial data in each Sharia Commercial Bank has data that matches the research variables.

This study's object is five banks in five countries in Asia, including Indonesia, Malaysia, Iran, Saudi Arabia, and Brunei Darussalam. The Sharia Banks studied amounted to five banks with one bank in Indonesia and four banks in other countries. These research aims are Mandiri Syariah Bank, CIMB Islamic Berhad, Brunei Darussalam Islamic Bank, Al Rajhi Bank, and Parsian Bank. This research was conducted in the period 2014-2018. This study's source of data is secondary data obtained from bank financial statements, which are the objects of this study. The financial statements are obtained from the official website of the bank concerned. This research is a comparative quantitative study using panel data. This study will determine the normality of data distribution using the Kolmogorov-Smirnov Test through the SPSS 21 for windows program. They are Followed by the Kruskal Wallis Test and the Mann Whitney Post Hoc Test. This study data processing technique is discriminant analysis, which is an equation that shows a linear combination of various independent variables.

$$D = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + \dots + b_KX_K$$

D: Discriminant Score

B: Discriminant Coefficient

X: Predictor or Independent Variable

This study's discriminant analysis was the discriminant analysis of the Altman Z score model formulated by Altman with the formula  $Z = 6.56 X_1 + 3.26 X_2 + 6.72 X_3 + 1.05 X_4$ . The approach in this study is a quantitative approach with Z-score calculation results. Data in the form of financial statements originating from the bank's official website are processed

manually to calculate the variables X1, X2 X3, and X4. After getting the variable values X1, X2 X3, X4, then the variable values are entered in the predictive discriminant analysis model of non-manufacturing companies from Altman with the help of Microsoft Excel computer software to get the Z-Score value. Then the value of the Z score is compared with the applicable provisions, namely:

- a. If  $Z < 1.88$ , it is included in the bankrupt company
- b. If  $Z > 1.88$ , including a grey area (critical condition prone)
- c. If  $Z > 2.99$ , this is a healthy company

From the results above, it can be seen that banks are predicted to go bankrupt, and those that will not go bankrupt. The next step is to calculate the average Z-score of the Islamic banks in Indonesia and Islamic banks in Asia to compare them later to determine which bank groups are at higher risk of bankruptcy.

## RESULT

### Descriptive Statistics

Before calculating the bankruptcy rate of Islamic Commercial Banks in Asia, the first thing to do is calculate the variables used. The variables used to calculate the bankruptcy rate of Islamic Commercial Banks in Asia in this study are working capital, total assets, retained earnings, earnings before tax (EBT), the book value of equity, and the book value of total liabilities. Based on the test results, the standard deviation values used in this study are relatively high. The results of the descriptive statistical analysis of the variables used in this study are as follows:

**Table 3. Descriptive Statistics of Sharia Commercial Bank Variables in Asia for the 2014-2018 Period (In Thousand US Dollars)**

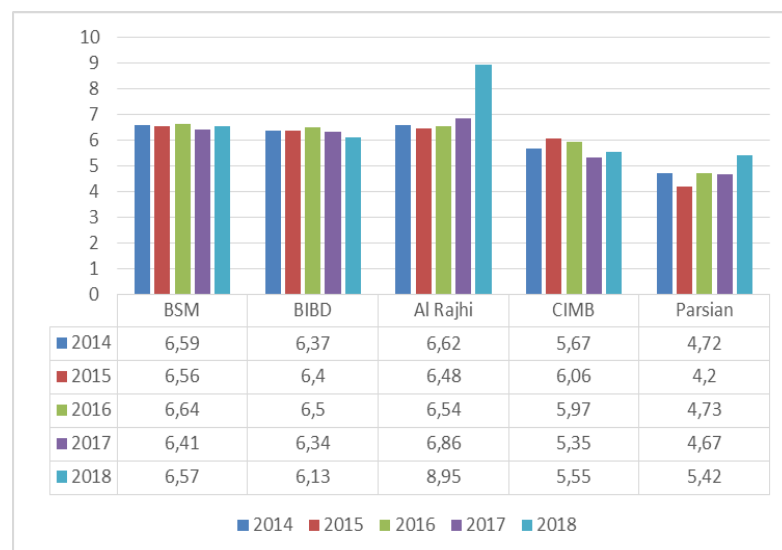
Variable	Mean	Max	Min	Std.Dev
Working Capital	115.459.830.412	86.293.402.537	10.149.940	60.033.475.27
Total Asset	146.759.388.071	97.304.148.166	4.859.318.301	72.027.190,62
Retained Earnings	3.524.361.017	3.707.312.058	39.219.975	2.066.985,68
EBT	2.806.260.473	2.732.218.493	7.984.847	1.594.640,9
Book Value of equity	13.514.491.231	20.975.934.760	358.374.460	10.439.032,1

Book Value of total liability	97.524.245.576	70.862.098.273	604.670.701	50.067.255,14
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Source: Official website of each Islamic bank and data processed by researchers based on the exchange rate of USD 22nd February 2020

Based on Table 1, it can be seen that the standard deviation values used in this study are relatively high. This shows the value of Islamic Commercial Banks' variables in Asia for the 2014-2018 period varied. Variations in the value of working capital, retained earnings, earnings before tax (EBT), the book value of equity, the book value of total liabilities, and total assets in Sharia Commercial Banks in Asia for the 2014-2018 period are quite varied. This is evidenced from by high standard deviation of each variable. Besides this, it can also be seen from the range of minimum and maximum values of each variable that has a considerable distance. This variation is caused by differences in the value of each country's currencies even though it has been equated with the exchange rate of the US Dollar. Each variable's average value shows a reasonable value where there is no significant difference and range of each variable.

**Figure 1. Bankruptcy Analysis Results**



Sources: researchers process data

Based on Figure 1. it appears that the level of the bankruptcy of Islamic Commercial Banks in Asia varies considerably. The highest z score was at Al Rajhi Bank, followed by Syariah Mandiri Bank (BSM), Brunei Darussalam Islamic Bank (BIBD), CIMB Malaysia



Berhad Parsian Bank. The low value of bankruptcy in Parsian Banks compared to Sharia Commercial Banks in other countries is caused by the turmoil in the country's economy, which is uncertain and affects Islamic banking development in Iran. The graph indicates that the overall bankruptcy rate of Islamic Commercial Banks in Asia is not bankrupt because it exceeded the Altman Z score's bankruptcy standard.

### Normality Test

After knowing each bank's bankruptcy value, the normality test is then performed to determine what method will be used in the different tests. Based on the normality test, results showed that there is still a significant value of Kolmogoroc Smirnov or Shapiro Wilk <Significance Value ( $\alpha = 0.05$ ). The Significance value of Kolmogorov Smirnov less than 0.05 includes BSM, BIBD, Al Rajhi, CIMB IB, and Parsian. As for the significant values of Shapiro Wilk, less than 0.05 are BSM, BIBD, Al Rajhi, CIMB IB, and Parsian. Then the data is not normally distributed. Therefore the different test used is the Kruskal Wallis Nonparametric Test.

### Kruskal Wallis Test

The different test used is the Kruskal-Wallis Nonparametric Difference Test because the data's normality is not distributed normally. The Kruskal-Wallis test is used to compare more than two samples of Islamic banking in Asia. The Kruskal Wallis Test results are as follows:

**Table 4. Kruskal-Wallis Test Results**

	Group X1	Group X2	Group X3	Group X4	Group Z
Chi-Square	10,143	16,825	17,947	11,800	15,389
df	3	3	3	3	3
Asymp. Sig	,017	,001	,000	,008	,002

a. Kruskal Wallis Test

b. Grouping Variable: Bank\_Syariah

The Kruskal Wallis test in table 3 shows that the value of  $p$  value = 0.00 <Significance Value ( $\alpha = 0.05$ ). Then there is a significant difference from the bankruptcy rate of Islamic Commercial Banks in Asia.

### Post Hoc Mann Whitney Test

Post Hoc Test is a follow-up test of different tests if there are significant differences between variables. The further different analysis used in this study was the Mann Whitney U-

Test. There are five bank samples in this study, so the Mann Whitney test amounted to 10 (ten) tests. The results of the Mann Whitney Post Hoc Test are as follows:

**Table 5. Post-Hoc Bankruptcy Test with Mann Whitney**

No	Syariah Bank			Sig	Information
1	BSM	X	BIBD	0,016	Different
2	BSM	X	Al Rajhi	0,465	Not Different
3	BSM	X	CIMB IB	0,009	Different
4	BSM	X	Parsian	0,009	Different
5	BIBD	X	Al Rajhi	0,016	Different
6	BIBD	X	CIMB IB	0,009	Different
7	BIBD	X	Parsian	0,009	Different
8	Al Rajhi	X	CIMB IB	0,009	Different
9	Al rajhi	X	Parsian	0,009	Different
10	CIMB IB	X	Parsian	0,016	Different

Source: Processed Data Researchers with SPSS 22 and Ms. Excel

Information :

BSM : Bank Syariah Mandiri

BIBD : Bank Islam Brunei Darussalam

CIMB IB : CIMB Islamic Berhad

Based on the Mann Whitney Post Hoc test results in table 4, it is known that nine out of ten tests conducted obtained the significance value /  $\rho$  Value  $<0.05$ , which means that there are significant differences between the two samples. However, one of the ten tests carried out results obtained significance value /  $\rho$  Value  $> 0.05$ , which means there is no significant difference between the two samples, which is contained in the experiments conducted at Bank Syariah Mandiri (BSM) and Al Rajhi. Therefore, overall there significant differences between the bankruptcy rates of Islamic Commercial Banks in Asia. There are five bank samples in this study, so the Mann Whitney Test amounted to ten tests.

- a. The Difference Between Bank Syariah Mandiri Bankruptcy Rates and Brunei Darussalam Islamic Banks
- b. The Difference Between Bank Syariah Mandiri Bankruptcy Rates and Al Rajhi Bank.
- c. The Difference Between Bank Syariah Mandiri and CIMB Islamic Berhad Bankruptcy Rates.

- d. The Difference Between Bank Syariah Mandiri and Bank Parsian Bankruptcy Rates.
- e. The Difference Between Bankruptcy Levels of Brunei Darussalam Islamic Banks and Al Rajhi Bank.
- f. Differences in the Bankruptcy Levels of Brunei Darussalam Islamic Banks and CIMB Islamic Berhad.
- g. The Difference Between Bankruptcy Levels of Brunei Darussalam Islamic Banks and Parsian Banks
- h. The Difference Between the Level of Bankruptcy of Al Rajhi Bank and CIMB Islamic Berhad.
- i. Difference between Al Rajhi Bank Bankruptcy and Parsian Bank.
- j. Differences in the Level of Bankruptcy of CIMB Islamic Berhad and Bank Parsian.

#### **Conditions of financial ratios of the Altman z score model at Islamic Commercial Banks in Asia**

The condition of financial ratios at Islamic Banks in Asia has increased and decreased every year. These financial ratios consist of working capital, retained earnings, Earnings Before Tax (EBT), the book value of equity, the book value of total liabilities, and total assets. The highest working capital was in Al Rajhi, amounting to 86,293 million USD in 2017. Furthermore, the highest retained earnings were also in Al Rajhi in 2017, amounting to 3,707 million USD. Overall, based on the financial ratio of Al Rajhi, the bank has the most considerable amount in each financial ratio. This is certainly comparable to the total assets owned by Al Rajhi, which have a more considerable amount than the four other Sharia Commercial Banks. The smallest financial ratios are at Parsian Bank with the most considerable total assets in 2018, amounting to 21,611 million USD. The low total assets owned by Parsian Bank positively affects the low of other financial ratios.

#### **Analysis of the Bankruptcy of Islamic Commercial Banks in Asia**

Based on the results of the level of bankruptcy according to the Altman z score method used shows that the highest average bankruptcy value is at Al Rajhi Bank with an amount of 7.08 points while the lowest average bankruptcy value is at Parsian Bank with an amount of 4.75 points. The high amount of bankruptcy at Al Rajhi Bank is due to the high total assets owned by Al Rajhi Bank accompanied by high-profit planning every year. As for the Parsian

Bank, the low value of bankruptcy in the Parsian Bank is due to the uncertain economic turmoil in the last few years, impacting the growth of Islamic banking in the country.

### **Analysis of the Difference in the Level of Bankruptcy of Islamic Commercial Banks in Asia**

Based on the Mann Whitney Post Hoc Test, it is known that one of the 10 (ten) tests performed obtained a significance value /  $\rho$  Value > 0.05, which means there is no significant difference between the two samples, which is contained in the tests conducted on BSM and Al Rajhi. Therefore overall, there are significant differences between the bankruptcy rates of Islamic Commercial Banks in Asia. This significant difference is due to a substantial difference in value between the highest and lowest bankruptcy values. Al Rajhi Bank, which has the highest bankruptcy rate, has an average value of 7.09 points, while the Parsian Bank, as the bank with the lowest bankruptcy rate, has an average value of 4.75 points.

### **CONCLUSION**

The Altman z score model's financial ratios on Islamic Commercial Banks in Asia have significant differences. The highest financial ratios are at Al Rajhi Bank, with the most considerable total asset achievement in 2017, and the smallest financial ratios are at the Parsian Bank in 2018. Based on the measurement of Sharia Commercial Banks' bankruptcy rate in Asia using the Altman Z Score method, the average level of the bankruptcy of Islamic banking in Asia is 6.6 points. This value shows that Islamic Commercial Banks in Asia belong to a good company and are free from the risk of bankruptcy. Overall based on the results of the Kruskal-Wallis Test and the Mann Whitney Post Hoc Test, it can be seen that there are significant differences between the bankruptcy rates of Sharia Commercial Banks in Asia. With a significant difference in the bankruptcy rate of Islamic Commercial Banks in Asia, each Islamic commercial bank in each country is expected to be able to maintain financial performance stability under economic conditions because financial performance is the foundation and fulcrum in sharia banking operations through increased revenue, asset turnover and other financial ratios to avoid the risk of bankruptcy in the future.

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