



Comparative Analysis of Financial Distress Risk in Sharia Foreign Exchange Bank and Non-Foreign Exchange Sharia Bank in Indonesia in 2014-2018 Using the Method Altman Z-Score Modification

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Abstract

This study aims to perform a comparative analysis of predictions of financial distress at Sharia Foreign Exchange Banks and Non-Foreign Exchange Sharia Banks. This study uses the Modified Altman Z-score model to explain the prediction of financial distress at Sharia Foreign Exchange Banks and Non-Foreign Exchange Sharia Banks, then the Mann-Whitney U Test is used to show a comparative analysis of the Altman Z-score value. Data used in This research is time series data, data from 2014 to 2018. The data is obtained from the publication of each website of the Sharia Foreign Exchange Banks and Non-Foreign Exchange Sharia Banks. Sampling technique in research uses a purposive sampling method. This study uses a sample of as many as 4 Sharia Foreign Exchange Banks and 4 Non-Foreign Exchange Sharia Banks. The results showed that based on the calculation of the level of risk financial distress carried out at Sharia Foreign Exchange Banks and Non-Foreign Exchange Sharia Banks in 2014 to 2018, can be concluded that no bank predicting to experience financial distress. Average The Z-score value of the two groups of Islamic Commercial Banks is above the cut value off the risk of financial distress. The results of the comparison of financial distress risk between Sharia Foreign Exchange Banks and Non-Foreign Exchange Sharia Banks on the calculation of the Z-score and Test Mann-Whitney U test shows that there is no difference in the risk of financial distress between Sharia Foreign Exchange Banks and Non-Foreign Exchange Sharia Banks as evidenced by: The significance value is more significant than 0.025, which is 0.685.

Keywords: *sharia foreign exchange banks and non-foreign exchange sharia banks; financial risk distress; altman z-score modification*

INTRODUCTION

Sharia Bank is a bank that carries out business activities based on sharia principles, namely the rules of agreement based on Islamic law between the bank and the bank other parties for depositing funds and or financing business activities or activities others that are declared in accordance with sharia (Acharya, 2005).

In its development, Islamic banking as an entity business does not always experience progress and success, and vice versa, sometimes experiences decreased performance. This can be seen in the data Table 1.4, which shows the net Profit of Islamic Commercial Banks for the 2014-2018.

Table 1. Net Profit of Sharia Foreign Exchange Banks and Non-Foreign Exchange Sharia Banks for the 2014-2018 Period

Bank Code	Year (In Millions of Rupiah)				
	2014	2015	2016	2017	2018
Sharia Foreign Exchange Banks					
BMI	59.000	74.000	81.000	26.000	46.000
BSM	605.213	365.166	325.414	289.576	-44.811
BMS	15.859	12.224	110.729	72.555	46.577
BNIS	163.000	229.000	227.000	307.000	416.000
MSI	55.913	-294.392	-163.738	-9.785	-64.720
Non-Foreign Exchange Sharia Banks					
BSB	8.499	27.778	-85.999	1.648	2.245
BPS	70.939	53.578	19.541	-968.851	20.788
BJBS	21.702	7.279	-414.714	-383.427	16.897
BVS	-19.386	-24.001	-18.473	4.593	4.974
BCAS	12.900	23.400	36.800	47.900	58.400
BRIS	2.822	122.637	170.209	101.091	106.600
BTPNS	965.311	670.182	412.495	169.206	98.941
BAS	439.433	433.577	348.408	423.238	397.572
BPD NTB	195.673	225.115	228.252	146.514	151.904

Source: Financial Statements of Islamic Commercial Banks (Data Processed)

The data in table 1.4 describes the financial statements for 2014-2018 providing complete financial information of Sharia Foreign Exchange Banks and Non-Foreign Exchange Sharia Banks Based on the level of net profit from the 14 Islamic Commercial Banks above, foreign exchange bank experienced fluctuations in net income in 2014-2018. Bank These include Bank Syariah Mandiri and Bank Mega Syariah. Besides that, several non-foreign exchange banks such as Bukopin Syariah Bank, Panin Dubai Syariah Bank, Bank Jabar Banten Syariah, Bank Victoria Syariah, and Maybank Syariah too. Experienced fluctuations in net income in a negative direction which is included in the unhealthy compared to other Sharia Banks. Even though Profit or Profit is one of the company's main goals in running activity. The company management always plans a strategy to earn a profit in each period determined through the targets that must achieve. If cannot obtain the profit target, it will seriously impact the company. In the short term, it may not have much effect unless the company suffers a significant loss. But in the long term, it can result in a lot of losses, the company experiences a decline in the financial condition, or the company is experiencing financial distress (financial distress); even worse, the company will go bankrupt because it is unable to finance activity.

According to Platt and Platt (2002), financial distress is a condition before bankruptcy or liquidation (Irham, 2014). Meanwhile, Almilialia (2006) states that financial distress can be indicated by negative net income for several years (Sufyani, 2019). Judging from the

aspect, three factors cause financial distress: lack of capital, large debt and interest expenses, and losses. Every company aims to maintain its survival in the long term; then financial distress is things that must be avoided by each of these companies, including sharia-based banking sector companies Foreign Exchange and Non-Foreign Exchange to avoid bankruptcy (bankruptcy).

The risk of financial distress experienced by foreign exchange banks is more complex compared to that experienced by Non-Foreign Exchange banks, especially when viewed from operational activities related to foreign currencies, especially if the situation at that time stated that the supply of foreign exchange at foreign exchange banks was thin there is a possibility that there will be risks in foreign exchange banks and can affect the level of financial health. The foreign exchange rate will determine the yield of real investment. A declining currency will reduce the purchasing power of income and capital gains derived from any type of investment. Decrease This investment will affect the bank's operational activities. With the descent investment, the demand for financing in Islamic banks will also decline.

Before going bankrupt, a company will experience difficulties financial distress (financial distress) which begins with a decline in financial condition during many years. Researchers assume that the bankruptcy of a company is mainly banking is something that must be avoided because the impact of bankruptcy banks harm not only the company, but also harm other parties. other parties who have a relationship with the company.

The emergence of various bankruptcy prediction models is an anticipation and an early warning system for possible occurrences of financial crisis. The purpose of the early warning system as a means to identify and even improve conditions before they reach a crisis condition or bankruptcy. Altman model (Z-score) is one approach to predicting financial distress by using financial ratios.

Altman developed an alternative discriminant model research based on consideration that many companies do not go public and do not have market value. Altman then revised his model can apply it to all companies, such as manufacturing, non-manufacturing, and bond-issuing companies in Developing country. Altman (1995) modified the Z-score equation to $Z'' = 6.56 x 1 + 3.26x2 + 6.72 x3 + 1.05 x4$. If the value of $Z < 1.1$, then it is included in companies experiencing financial distress. If the value $1.2 < Z < 2.6$ then it fits the gray area (it cannot be determined whether the company is classified as healthy or not) experiencing financial distress). If the Z value > 2.6 , then it is included in the company who do not experience financial distress (Hery, 2017).

Research conducted by Raditya Prawita Jati and Ari Prasetya (2018) examined the potential for bankruptcy of Islamic Commercial Banks in Indonesia in 2012- 2016 using the Multiple Discriminant Analysis methods. In his research It is stated that although Islamic banks have not experienced the impact of the global crisis, if economic activity continues to decline, then the sharia profit sharing be disrupted due to minimal profits.

Moreover, bank competition Sharia is getting stricter due to the many new Islamic banks that have sprung up. Thus, to measure the potential for bankruptcy in Islamic Commercial Banks, this study uses the Modified Altman Z-score model as a method of calculation (Jati & Prasetyo, 2018). In addition, Kartika (2015) also researched the potential for bankruptcy in the Islamic banking sector to deal with the environmental business. The problem in this study is when conventional banks experience economic hardship. Meanwhile, Islamic banking did not experience much negative impact due to the crisis, but that does not mean that Islamic banks will not take risks someday. To anticipate these risks, action is needed to calculate its financial condition as early as possible. Study This study uses the Modified Altman Z-score model to measure the condition of finance in Islamic banks (Ihsan & Kartika, 2015).

LITERATURE REVIEW

1. Financial Distress

Platt and Platt (2002) define financial distress as a decline in financial condition before bankruptcy or liquidation (Irham, 2014). According to Hofer, financial distress is a condition where the net income (net Profit) of the company has been negative for several years (Kholis, 2016). Financial distress can occur in various companies and can be used as marker of bankruptcy that the company may experience. Financial distress is a situation where the company has difficulty meeting its obligations, circumstances where The company's revenue cannot cover the total cost, and suffers a loss. For creditors, this situation is an early symptom of debtor failure (Hery, 2017).

2. Factor that causing financial distress

Indications of the occurrence of financial distress or financial difficulties in a company's economic performance. The company's financial performance is reflected in financial statements issued by the company. In the banking world, early indications of financial distress can be seen from the income statement, where the bank experienced consecutive negative net income. Hofer (1980) and Whitaker (1999) liken financial distress to a condition of a company that experienced negative net income for several years (M, Amboningtyas, & Paramit, 2019).

Financial distress can be caused by internal or external factors external. These factors are as follows (Hery, 2017):

- a. Internal factors
 - 1) The credit given is too big
 - 2) Weak human resources qualifications in terms of skills, expertise, experience, responsiveness and initiative
 - 3) Lack of working capital

- 4) Abuse of authority and fraud
- b. External factors
 - 1) Intense business competition
 - 2) Reduced demand for the resulting product or service
 - 3) The continuous decline in selling prices
 - d. Accidents or natural disasters that occur and harm the company, thus affecting the course of the company's activities.

3. Altman Z-Score models

Altman discriminant analysis (Z-score) is one of many model developed to predict bankruptcy. The Z-score model developed in 1968 by Edward Altman. During his research, Altman made three adjustments to the Z-score formula to predict bankruptcy more accurately according to the company's characteristics. There are three equations used in financial distress prediction models; each of these equations is used for public manufacturing companies, private manufacturing companies, and companies non-manufacturing or service companies.

Altman model equation for service companies (modified Altman model) is as follows:

$$Z'' = 6.56X_1 + 3.26X_2 + 6.72X_3 + 1.05X_4$$

Information:

Z = Overall index

X₁ = Working Capital/Total Assets

X₂ = Retained Earnings/Total Assets

X₃ = Earnings Before Interest and Taxes/ Total Assets

X₄ = Book Value of Equity/Total Liability

The classification of healthy companies and financial distress is based on the Z-value Modified Altman (1995) score model, namely:

- a. If the Z value < 1.1, it includes companies experiencing financial distress
- b. If the value of 1.1 < Z < 2.6, it is included in the gray area (it cannot be determined whether the company is classified as healthy or experiencing financial distress).
- c. If the Z value > 2.6, it is a company that is not financially experienced distress.

4. Ratios in the Altman Model

- a. Net Working Capital to Total Assets (X₁)

The percentage of working capital to assets; this ratio is used to measure company liquidity. The formula can calculate this ratio:

$$X_1 = \frac{\text{Net Working Capital}}{\text{Total Asset}}$$

- b. Retained Earnings to Total Assets (X₂)

Retained earnings to total assets is a profitability ratio that assesses the company's ability to generate profits during the company's operating life. The greater this ratio indicates, the more significant the role of retained earnings in the form of corporate fund. The formula can calculate this ratio:

$$X_2 = \frac{\text{retained earnings}}{\text{total asset}}$$

c. Earnings Before Interest and Taxes to Total Assets (X3)

The percentage of earnings before interest and taxes to total assets is a ratio of productivity of the use of borrowed funds. This ratio is a measure of the actual productivity of company assets regardless of taxes.

$$X_3 = \frac{\text{earning before interest and taxes}}{\text{total asset}}$$

d. Book Value of Equity to Total Assets (X4)

Book value of equity/total liability is used to measure a company's leverage level. This ratio is calculated by comparing total equity value with total liabilities owned by Islamic banks. This ratio shows the bank's ability to guarantee its obligations with the equity owned (Sanjaya, 2018).

$$X_4 = \frac{\text{book value of equity}}{\text{total liability}}$$

5. Hypothesis

The purpose of this study is to perform a financial comparison analysis of distress on Sharia Foreign Exchange Banks and Non-Foreign Exchange Sharia Banks.

In theory, the risk of financial distress experienced by Sharia foreign exchange banks is more complex than non-foreign exchange sharia banks, especially when viewed from the operational activities. There are differences in the scope of operational activities that allow differences in the risk of financial distress borne by Sharia Foreign Exchange Banks and Non-Foreign Exchange Sharia Banks therefore the following Hypothesis was developed:

Based on the description above, the theories of risk level comparison analysis financial Sharia Foreign Exchange Banks and Non-Foreign Exchange Sharia Banks developed as follows:

1. H1: there are differences in the level of financial distress risk in Sharia Foreign Exchange Banks and Non-Foreign Exchange Sharia Banks in Indonesia based on the method Altman Z-score Modification

- a. H0: there is no difference in the level of financial distress risk measured based on the modified Z-score value between Sharia Foreign Exchange Banks and Non-Foreign Exchange Sharia Banks

- b. Ha: there is a difference in the level of financial distress risk measured by modified Z-score between Sharia Foreign Exchange Banks and Non-Foreign Exchange Sharia Banks

METHOD

1. Types of research

This type of research is quantitative research with a study approach which is descriptive and comparative. Quantitative research is process of research to find knowledge using data in the form of numbers as a tool to analyze the goals we want to know (Kasiram, 2008). The implementation time of this research starts from February to July 2021.

2. Research Location and Time

Conducted this research from February to July 2021. Carried out the location of this research at Sharia Foreign Exchange Banks and Non-Foreign Exchange Sharia Banks, which registered with the Financial Services Authority (OJK) and issued an annual report from 2014-2018.

3. Data and Sources

The primary data used in this study are financial statements Sharia Foreign Exchange Banks and Non-Foreign Exchange Sharia Banks 2014 until 2018. The source of data is obtained from the website of each related bank data that has been published in the form of an annual report (annual report). Data needed in this study in the form of an overview of the company or profile companies and financial statements of Sharia Foreign Exchange Banks and Non-Foreign Exchange Sharia Banks 2014-2018 period.

4. Population and Sample

The people in this study were all Sharia Foreign Exchange Banks and Non-Foreign Exchange Sharia Banks in Indonesia under the supervision of the Bank Indonesia and the Financial Services Authority of 14 Islamic Commercial Banks. Sample taken in this study a several 8 banks using 40 different data is data on the financial statements of Sharia Foreign Bank, and Non-Foreign Exchange Sharia Banks obtained from the website of each bank.

The sampling technique in this study is the non-Sampling technique of probability sampling by using a purposive sampling technique, namely the Sample taken based on specific criteria to get a good sample according to research. The requirements in this study are

- a. Sharia Commercial Banks, which are included in Sharia Foreign Exchange Banks and Non-Foreign Exchange Sharia Banks

- b. Sharia Commercial Banks issue annual financial reports that have been audited and published in 2014-2018.
- c. Sharia Commercial Banks that experienced declining financial performance in 2014- 2018. Sharia Commercial Banks that are the object of research are as follows: following:

Table 2. List of Sample Sharia Foreign Exchange Banks and Non-Foreign Exchange Sharia Banks for 2014-2018

No	Sharia Commercial Bank	Code
Sharia Foreign Exchange Banks		
1	Bank Muamalat Indonesia	BMI
2	Bank Syariah Mandiri	BSM
3	Bank Mega Syariah	BMS
4	Bank Maybank Syariah Indonesia	BMSI
Non-Foreign Exchange Sharia Banks		
1	Bank Syariah Bukopin	BSB
2	Bank Panin Dubai Syariah	BPDS
3	Bank Jabar Banten Syariah	BJBS
4	Bank Victoria Syariah	BVS

5. Research variable

In this study, the variables used are risk comparisons financial distress, and financial ratios of Sharia Foreign Exchange Banks and Non-Foreign Exchange Sharia Banks using the Altman Z-score method. These variables include:

- a. Z-Score
- b. X1 (Working Capital to Total Assets)
- c. X2 (Retained Earnings to Total Assets)
- d. X3 (Earning Before Interest and Taxes to Total Assets)
- e. X4 (Book Value of Equity to Total Liabilities)

6. Data analysis technique

Data analysis in this study was carried out quantitatively using descriptive analysis. There are two stages in this research; the first stage is processing of data obtained from financial statements utilizing the model Altman Z-score. The second stage is data processing using techniques of statistics, namely hypothesis testing. The Mann-Whitney test is one of the nonstatistical tests parametric used as an alternative to the independent parametric statistical test Sample T-Test.

RESULTS

Table 3. Z-Score Results of Sharia Foreign Exchange Banks and Non-Foreign Exchange Sharia Banks for 2014-2018

Nama Bank	2014	2015	2016	2017	2018	Rata- rata
Sharia Foreign Exchange Banks						
Bank Muamalat	2.1716	1.9173	1.8051	1.9115	2.6435	2.089
Bank Syariah Mandiri	2.2509	2.5829	2.7681	3.3035	3.8894	2.959
Bank Mega Syariah	1.953	2.2664	4.3384	3.4445	3.3837	3.077
Bank Maybank Syariah	10.6654	-4.695	3.657	8.5113	9.0561	5.439
Non-Foreign Exchange Sharia Banks						
Bank Bukopin Syariah	2,109	2.2256	2.3294	2.5106	2.171	3.397
Bank Panin Dubai Syariah	2.898	2.7855	2.9214	1.082	3.3624	2.609
Bank Jabar Banten Syariah	2.7826	3.4075	2.3287	2.6505	2.1164	2.657
Bank Victorua Syariah	3.7861	3.1612	2.228	3.735	3.430	3.268

Source: data processed 2021

The first objective of this study, which is to analyze the risk of financial distress at Sharia Foreign Exchange Banks and Non-Foreign Exchange Sharia Banks using the Altman Z-score Modification method, shows that the average value of Z-score Average Z-score of Sharia Foreign Exchange Banks and Non-Foreign Exchange Sharia Banks that is above the cut off value of high risk of financial distress, namely $Z < 1.1$.

Bank Muamalat, with an average Z- a value of 2.08, is in the gray area. Mandiri sharia bank has an average Z-score of 2,959 and is in the healthy category. The average Z-score of Bank Mega Syariah is 3,077, and can say the average Maybank Syariah Z-score value of 5,439 that Bank Maybank Sharia is in a healthy condition and is likely to experience financial distress very small. Bukopin Sharia Bank, with an average Z- a value of 2.26, is at gray area. Panin Dubai Syariah Bank has an average Z-score of 2.60 and is in the healthy category. The average Z-score of Bank Jabar Banten Syariah is 2.65, and the average Z-score of Bank Victoria Syariah is 5,439, can say that Bank Victoria Syariah is in a healthy condition and is likely to experience minimal financial distress.

Table 4. Comparative analysis of the Z-score of Sharia Foreign Exchange Banks and Non-Foreign Exchange Sharia Banks 2014-2018

Z-SCORE	
Mann-Whitney U	185.000
Wilcoxon W	395.000
Z	-0.406
Asymp. Sig. (2-tailed)	0.685
Exact Sig. [2*(1-tailed Sig.)]	0.698 ^b

Hypothesis testing is carried out to find out whether there is a significant difference in risk of financial distress between Sharia Foreign Exchange Banks and Non-Foreign

Exchange Sharia Banks. using the Altman Z-score Modified method test the Hypothesis in This study uses the Mann-Whitney test because the data distribution is not normal.

Based on the results of the Mann Whitney U test in table 4 above shows that the significance value of $0.685 > 0.025$ means that H_0 is accepted and H_a is rejected. This shows no difference in the level of financial distress risk measured based on the modified Altman Z-score method between Sharia Foreign Exchange Banks and Non-Foreign Exchange Sharia Banks

DISCUSSION

The mann-whitney test result show no difference in financial risk distress Sharia Foreign Exchange Banks and Non-Foreign Exchange Sharia Banks based on the Altman. Method Modified Z-score. There is no difference in the risk of financial distress at the Sharia Foreign Exchange Banks and Non-Foreign Exchange Sharia Banks are caused by Foreign Exchange Sharia General and Non-Foreign Exchange Sharia Commercial Banks can maintain liquidity is good, as evidenced by the absence of a working capital to total ratio assets of Sharia Foreign Exchange Banks and Non-Foreign Exchange Sharia Banks with negative values. As intermediary institutions, maintaining liquidity is important to every bank.

Although it is known that Sharia Foreign Exchange Banks have deeper risks In terms of exchange rate risk, it turns out that this does not cause a difference in the risk of financial distress at Sharia Foreign Exchange Banks and Non-Foreign Exchange Sharia Banks in Indonesia based on the Altman Z-score Modified method. Results This study is in line with research conducted by Muharami (2017) which examined regarding the comparative analysis of bankruptcy risk at Sharia Foreign Exchange Banks and Non-Foreign Exchange Sharia Banks in Indonesia using the Altman Z- score in his research Muharami said that the difference in bank status did not will cause a difference in the prediction of a bank's bankruptcy.

In the analysis model that Altman developed for non-manufacturing, such as banking, the coefficient of the liquidity ratio represented by the variable X1 (working capital to total assets) is the most influential variable after the variable X3 (earnings before interest and taxes to total assets), which represents profitability ratios. This shows that according to the Altman Z-score model, Modification, in addition to profitability ratios, liquidity ratios have a significant influence on the risk assessment of a bank's financial distress. As seen in the equation Altman model the X1 variable has a coefficient of 6.56, much larger than the other two variables. However, there are differences in bank status; Sharia Foreign Exchange Banks and Non-Foreign Exchange Sharia Banks do not affect the difference in risk of financial distress at the bank. Coupled with Bank Indonesia Regulations about bank

liquidity which also does not distinguish the status of a bank, whether it is a Sharia Foreign Exchange Banks and Non-Foreign Exchange Sharia Banks.

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CONCLUSION

Based on the calculation of the level of financial distress risk carried out in Sharia Foreign Exchange Banks and Non-Foreign Exchange Sharia Banks from 2014 to 2018, it can concluded that no bank is predicted to experience financial distress. The average Z-score of the Sharia Foreign Exchange Banks and Non-Foreign Exchange Sharia Banks is above the cut-off value of the high risk of financial pain, namely $Z < 1.1$. It shows no Sharia Foreign Exchange Banks and Non-Foreign Exchange Sharia Banks financial distress risk in 2014-2018.

Comparison of financial distress risk of Sharia Foreign Exchange Banks and Non-Foreign Exchange Sharia Banks based on the results of the calculation of the Z-score value and the Mann Whitney U test shows that there is no difference in the risk of Sharia Foreign Exchange Banks and Non-Foreign Exchange Sharia Banks, as evidenced by their significance value greater than 0.025 which is 0.685. There is no difference in the risk of financial distress in Sharia Foreign Exchange Banks and Non-Foreign Exchange Sharia Banks: Sharia Foreign Exchange Banks and Non-Foreign Exchange Sharia Banks can maintain good liquidity. As an intermediary institution, maintaining liquidity is an important thing that every bank must consider. There is a difference. The status of Sharia Foreign Exchange Banks and Non-Foreign Exchange Sharia Banks does not affect the difference in risk of financial distress at the bank. It is coupled with Bank Regulations Indonesia regarding bank liquidity which also does not distinguish what bank status it is, Sharia Foreign Exchange Banks and Non-Foreign Exchange Sharia Banks.

REFERENCES

- Altman, E. I. (2000). Predicting *Financial distress* Of Companies: Revisiting The Z- score And ZETA Models. *Journal Of Banking & Finance*, 5-36.
- Aninda, N. (2018). *Mega Syariah Bersih-Bersih Aset Bermasalah*. Jakarta: Bisnis.com.

- Anshori, A. G. (2010). *Pembentukan Bank Syariah Melalui Akuisisi Dan Konversi*. Yogyakarta: UII Press.
- Apriyanti, H. (2018). *Teori Akuntansi Berdasarkan Pendekatan Syariah*. Yogyakarta: Deepublish.
- Arifin, I. (2007). *Membuka Cakrawala Ekonomi*. Jakarta: Setia Purna Inves .
- Arifin, J. (2017). *SPSS 24 Untuk Penelitian dan Skripsi*. Jakarta: PT Elex Media Komputindo.
- Ascarya, D. Y. (2005). *Bank Syariah: Gambaran Umum*. Jakarta: Pusat Pendidikan dan Studi Kebanksentralan (PPSK).
- Azbika, P., Lubis, D. S., & Winata, E. (2018). Analisis Laporan Keuangan Sebagai Alat Prediksi Kebangkrutan Pada Perusahaan Properti Yang Terdaftar Di Bursa Efek Indonesia. <https://doi.org/031227/osf.io/dk9j6>.
- Azis, A. (2015). Analisis Perbandingan Kinerja Keuangan Bank Devisa Dan Bank Non Devisa Di Indonesia. *Jom FEKON Vol.2, No 1*.
- Bareksa. (2017). *Sambil Perbaiki Anak Usaha Syariah, Bank BJB LANjutkan Rencana Akuisisi*. Jakarta: Bareksa.co.
- Bustari Muchtar, d. (2016). *BANK Dan Lembaga Keuangan Lain*. Jakarta: Kencana.
- Dangnga, M. T. (2018). *Kinerja Keuangan Perbankan Upaya Untuk Menciptakan Sistem Perbankan Yang Sehat*. Pustaka Taman Ilmu.
- Enterprise, J. (2018). *SPSS Komplet Untuk Mahasiswa*. Jakarta: PT Elex Media Komputindo.
- Ericson, B. L. (2007). *Manajemen Aktiva dan Pasiva Bank Devisa: Pengetahuan Dasar Bagi Mahasiswa dan Preaktisi Perbankan*. Jakarta: Grasindo.
- Fauzi, Y. (2017). *Memetik Manis Buah Perubahan Model Bisnis Bank Mega Syariah*. Jakarta: CNN Indonesia.
- fitriyah, I., & Hariyati. (2013). Pengaruh Rasio Keuangan Terhadap *Financial distress* Pada Perusahaan Properti Real Estate. *Jurnal Ilmu Manajemen. Vol. 1, No. 3*.
- Gunawan, I. (2016). *Pengantar Statistika Inferal*. Depok: PT Rajagrafindo .
- Hadi. (2014). Mekanisme Corporate Governance dan Kinerja Keuangan Pada Perusahaan yang Mengalami *Financial distress*. *Jurnal Akuntansi, Vol. 3, No. 5, 1-17*.
- Hartati, N. (2017). Analisis Komparasi Kinerja Keuangan; Bank Devisa Dan Bank Non Devisa. *Jurnal Pendidikan Ekonomi UM Metro Vol.5, No.2, 34-49*.
- Hasan, M. I. (2002). *Pokok-Pokok Materi Metodologi Penelitian & Aplikasinya*. Bogor: Ghalia Indonesia.

- Hery. (2017). *Kajian Riset Akuntansi Mengulas Berbagai Hasil Penelitian Terkini dalam Bidang Akuntansi dan Keuangan*. Jakarta: PT Grasindo.
- Himawan, A. (2015). *Laba Bank Syariah Tertekan Di Tahun Lalu*. Jakarta: Kontan.co.id.
- Hosen, M. N., & Nada, S. (2013). Pengukuran tingkat Kesehatan Dan Gejala *Financial distress* Bank Umu Syariah. *Jurnal Economia Vol. 9, No. 2*, 215- 226.
- Iqbal, M., Riyadi, S., Sabrianti, P., & Afidah, A. N. (2018). Pemetaan Tingkat Kesulitan Keuangan Bank Syariah Di Indonesia. *Jurnal Economia Vol. 14, No 2*, 138-157.
- Irham, F. (2014). *Pengantar Perbankan Teori dan Aplikasi*. Bandung: Alfabeta. Ismail. (2011). *Perbankan Syariah*. Jakarta: Kencana.
- Jumingan. (2014). *Analisis Laporan Keuangan*. Jakarta: Bumi Aksara. Kariyoto. (2017). *Analisa Laporan Keuangan*. Malang: UB Press.
- Kasiram, M. (2008). *Metode Penelitian Kualitatif-Kuantitatif*. Jakarta: UIN Malang Press.
- Kasmir. (2018). *Analisis Laporan Keuangan*. Depok: Rajagrafindo persada.
- Kholis, L. K. (2016). Analisis Model Prediksi *Financial distress* Pada Perusahaan Perbankan Syariah Di Indonesia.
- Kuncoro, M. (2007). *Metode Kuantitatif Teori dan Aplikasi untuk Bisnis dan Ekonomi*. Yogyakarta: UPP STIM YKPN.
- Laila, N., & Zulaikah, S. (2016). Perbandingan *Financial distress* Bank Syariah Di Indonesia Dan Bank Islam Di Malaysia Sebelum Dan Sesudah Krisis Global 2008 Menggunakan Metode Altman Z-score. *Jurnal Ekonomi Syariah dan Terapan, Vol. 3, No 11*.
- M, A. I., Amboningtyas, D., & Paramit, P. D. (2019). Analysis Of Financial Distres Prediction Sharia Banking Using Altman, Springate, And Zmijewski Methods (Case Study On Sharia Commercial Banks In Indonesia Registerd At OJK for 2013-2017). *Journal Of Management Vol. 5, No. 5*, 1-13.
- Martono. (2013). *Bank dan Lembaga Keuangan Lain*. Yogyakarta: Ekonosia. Mochamad, I., & Yuniati. (2014). Analisis *Financial distress* Dengan Pendekatan Altman Z-score Untuk Memprediksi Kebangkrutan Perusahaan Telekomunikasi. *Jurnal Ilmu & Riset Manajemen* , 1-18.
- Monavita, A. N. (2019). *2018, Aset Syariah Maybank Tumbuh 11,2 Persen Menjadi 30 Triliun* . Jakarta: Kompas.com.
- Muhammad. (2011). *Manajemen Bank Syari'ah*. Yogyakarta: UPP STIM YKPN.
- Muharami, S. R. (2018). Analisis Prediksi Kebangkrutan dan Rasio Keuangan Bank

- Umum Syariah Dengan Metode Altman Z-Score pada Tahun 2011-2015. *Journal Of Islamic Economics, Finance, and Banking Vol. 1, No 1&2*.
- Mukhlisah, N. (2011). Analisis Kebangkrutan Pada Perusahaan Property dan Real Estate Yang Terdaftar Di Bursa Efek Indonesia. *Jurnal Intekna, No. 2* , 200- 201.
- Nosita, F., & Jusman, J. (2019). *Financial distress* Dengan Model Altman dan Springate. *Jurnal Ilmiah Manajemen dan Bisnis Vol 20, No. 2*.
- Nuryadi, & dkk. (2017). *Dasar-Dasar Statistik Penelitian*. Yogyakarta: Gramasurya.
- Pitoko, R. A. (2018). *Permasalahan Permodalan Bank Muamalat Yang Tak Kunjung Usai*. Jakarta: Kompas.
- Sanjaya, S. (2018). Analisis Prediksi Kebangkrutan Perusahaan Dengan Menggunakan Metode Altman Z-score Pada Perusahaan Sektor Perkebunan Yang Terdaftar Di Bursa Efek Indonesia Periode2012-2016. *Jurnal Ilman, Vol. 6, No. 2*, 51-61.
- Sari, N., & Wardani, R. (2015). *Pengolahan dan Analisis Data Statistika dengan SPSS*. Yogyakarta: Deepublish.
- Setyawan, D. A. (2021). *Petunjuk Praktikum Uji Normalitas & Homogenitas Data Dengan SPSS*. Klaten: CV Tahta Media Group.
- Sitanggang, L. M. (2018). *Ekonomi Belum Stabil, Kinerja Pembiayaan Bank Syariah Melambat* . Jakarta: Kontan.co.id.
- Sofi, P. W. (2019). Analisis Komparatif tingkat Risiko Kebangkrutan Perbankan Di Indonesia Dengan Menggunakan Metode Altman Z-Score Modifikasi (Studi Antara Bank Umum Syariah danBank Umum Konvensional Period 2013- 2017). *Skripsi*.
- Suciani, A. (2016). Identifikasi Perbedaan Kinerja Keuangan Antara Bank Devisa Dengan Bank Non Devisa Di Indonesia Periode 2013-2015. *Publikasi Ilmiah*.
- Sugiyono. (2016). *Metode Penelitian Kuantitatif, Kualitatif dan R&D*. Bandung: Alfabeta.
- Supriyatna, I. (2017). *Aset Bank Syariah Mandiri Tumbuh 12,03 persen pada 2016*. Jakarta: Kompas.com.
- Suwiknyo, D. (2016). *Analisis Laporan Keuangan Perbankan Syariah*. Yogyakarta: Pustaka Belajar.
- Yudistira, G. (2015). *Maybank Syariah Pesimistis Cetak Laba Bersih*. Jakarta: Kontan.co.id.
- Yudistira, G. (2017). *Labanya BJB Syariah Turun 80,2% Di Kuartal I 2017*. Jakarta: Kontan.co.id.
- Yudistira, G. (2018). *Pembiayaan Macet capai 12%, Bank Panin Syariah Rugi Rp 968 Miliar*. Jakarta: Kontan.co.id.