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POTENTIAL BANKRUPTCY WITH SYSTEMIC IMPACT DURING PANDEMIC

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Abstract : The world economy condition was not in the best condition in 2019 until several years later. This is due to the Covid pandemic, which has forced several countries to take firm action in the form of limiting community activities as a whole, resulting in a decline in economic activity. Restrictions on community activities will result in a general economic downturn marked by a decline in economic growth. The banking business, which relies heavily on good economic conditions, will certainly be affected. The worst possibility that can happen is the bankruptcy of the bank caused by the pandemic. This study tries to reveal how the potential for bankruptcy may be experienced by the bank. The sample of this research is a group of banks with systemic impact in Indonesia based on the decision of the Financial Services Authority of the Republic of Indonesia in 2017. According to this decision, there are fifteen banks in Indonesia which are categorized as systemic impact banks. This study used fourteen banks and left one bank with a systemic impact due to insufficient data for processing. By using commonly used bankruptcy measures, this study concludes that in the period of observation, there are three banks that have the potential to go bankrupt and the rest are in the gray area and there is no bank that does not have the potential to go bankrupt.

Keywords: *Bankrupt, Banking, Pandemic, Economic Crisis*

1. Introduction

Business entities operating in the end will be faced with two possibilities, namely profit or loss. In logical thinking, of course all business entities will want that in their operations they will get a profit. However, under certain conditions, the company or business entity will face a condition called financial distress. Financial distress is defined as the initial stage of bankruptcy in a business entity or company which is generally characterized by a decrease in several important financial measures. Financial distress in some literature is a sign that can be seen using financial ratio analysis.

The bankruptcy condition experienced by the company can be influenced by several things. In general, things that affect the company's financial condition can be divided into two, namely internal factors and external factors from the company itself. Internal factors are factors that can affect the company's financial condition that comes from within the company itself. Some of the literature and empirical studies, generally the biggest factor that can bring losses to the company is from the marketing side, where in the sales process there are obstacles in meeting the minimum target. The field or part of the company's finances is another important part in managing the company. Without ignoring other parts of the

company, these two parts are the backbone of the company. One of the two things does not work as it should, generally it will be followed by a less favorable condition of the company. This applies to both manufacturing, service and financial companies or financial companies.

Meanwhile, external factors that can affect the company's operations include economic conditions. Whatever field one company takes, the state's economic condition will definitely affect the company's condition. If the economic condition is in prime condition, it is certain that the company will be in good condition as well. This is because if the general economic condition is in good condition, then the level of public consumption will be at a normal level or level, so that it will also affect sales within the company.

Banking itself can be seen as an industry which in its operations is likened to a manufacturing company, in certain respects there are differences. As a company, banks can also experience the conditions experienced by manufacturing companies. The condition of the Indonesian economy in 1997/1998 is an empirical example where banks can also experience bankruptcy. There were many banks that had to be liquidated and their operations frozen for various reasons.

The banking condition at this time is indeed progressing when compared to the condition of the Indonesian banking industry in 1997/1998. However, this does not mean that the banking industry can be negligent, because the financial crisis, as has happened, can happen again and can even have a bigger impact than the previous financial crisis. Considering that banking is the backbone of the economy for a country with a very vital role, it is very important to know in advance which banks are experiencing unhealthy conditions and tend to go bankrupt. The problem will be more crucial if the bank in question is a bank with a systemic impact on one country.

Data disclosed by Bank Indonesia states that from 1997 to 1998 there were more than 17 banks that had their businesses frozen or liquidated. Some of the surviving banks chose to sell their shares to foreign banks or conduct business mergers to strengthen the company's financial structure. All of the liquidated banks initially showed the same symptoms, namely liquidity shortages. During the 1997-1998 economic crises, the cost of liquidity was very high. At that time, the deposit interest rate was recorded at 70 percent.

Problems become more complex when a pandemic occurs that not only attacks one country, but also attacks all countries in the world. Practically, this condition greatly affects the global economy. All activities must stop and many countries have implemented lock downs or strict restrictions on all community activities. This condition clearly makes the economy worse and will have an impact on banking operations in general.

Some literature clearly reveals that banking and the economy in general have a reciprocal relationship. A strong economy will support banks to grow and operate normally. Vice versa, banking is a superstructure in the economy. In general, the economy is in dire need of sound banking to be able to show its best performance.

The modern banking industry has practiced a prudential banking management system in which banks must be more careful of all kinds of risks that may occur. The implementation of the prudential banking management system has made several banks not experience problems, even though economic conditions are not at their best. However, in reality not all banks were able to get through the economic crisis due to the pandemic well.

Seeing the presentation that has been delivered, this study tries to look more comprehensively on the financial distress experienced by banks in Indonesia. Banking in Indonesia is divided into several categories, so the researcher chooses to use a bank with a systemic impact bank category in Indonesia with the consideration that if a problem occurs in

a bank categorized as a systemic impact, it will affect the economy in Indonesia. So, it is very important to know the initial signal of bank bankruptcy, especially banking which is included in the category of systemic impact. This study also tries to formulate several policies related to banking and financial distress, especially banks that fall into the category of systemic impact.

2. Literature Review

Bankruptcy

Bankruptcy is a condition when a company experiences insufficient funds to run its business. According to the Bankruptcy Law no. 4 of 1998, a debtor who has two or more creditors and does not pay at least one debt that has matured and is collectible is declared bankrupt by a competent court decision, either at his own request or at the request of one or more creditors.

Issuers or public companies that fail or are unable to avoid failure to pay their obligations to unaffiliated lenders, the issuer or public company is required to submit a report on the loan including the principal and interest amount, term of the loan, name of the lender, use of the loan and reasons for failure. or the inability to avoid failure to Capital market supervisory agency and the Stock Exchange where the securities of the issuer or public company are listed as soon as possible, no later than the end of the second day since the issuer or public company experiences a failure or becomes aware of the inability to avoid such failure. Short-term financial difficulties can develop into non-solvable difficulties, and the company may be liquidated or reorganized. Liquidation is chosen if the value of the liquidation is greater than the value of the company if it is continued. Reorganization is chosen if the value of the company if it is continued is greater than the liquidation value.

Bankruptcy analysis was conducted to obtain early signs of bankruptcy. The earlier signs of bankruptcy the better for management because management can make improvements. Creditors and shareholders can make preparations to overcome various bad possibilities. Signs of bankruptcy in this case are seen by using accounting data.

There are several indicators that can predict a company's bankruptcy. One source is cash flow analysis for now or for the future and analysis of corporate strategy. Another source is the company's financial statements. Financial statements can be used to predict bankruptcy with the assumption that the distribution of financial variables is for companies experiencing financial difficulties. If several variables are used to predict, there is a possibility that conflicting results will be obtained. To overcome such weaknesses, multivariate prediction methods can be used.

Altman Z-Score Model Analysis

One of the most commonly used quantities to predict bankruptcy is to use the Altman Z Score model. Bankruptcy Analysis Z is a tool used to predict the level of bankruptcy of a company by calculating the value of several ratios and then entering it in a discriminant equation. To calculate the Z value, we must first calculate five types of financial ratios. A number of studies have been conducted to determine the usefulness of financial ratio analysis in predicting business failure or bankruptcy. One of the studies on this prediction is the multiple Discriminant analysis conducted by Altman, namely the Z-Score analysis. The Z-Score formula for predicting bankruptcy from Altman is a multivariate formula used to measure the financial health of a company. Altman found 5 types of financial ratios that can

be combined to see the difference between bankrupt and non-bankrupt companies. Altman Z-Score is determined using the following formula:

$$Z = 0.012(X1) + 0.014(X2) + 0.033(X3) + 0.006(X4) + 0.999(X5) \quad (1)$$

Information:
1. Working Capital to Total Assets (X1)
2. Retained Earnings to Total Assets (X2)
3. Earnings before Interest & Taxes to Total Assets (X3)
4. Market Value of Equity to Book Value of Debt (X4)
5. Sales to Total Assets (X5)

Z = Overall Index

The criteria used to predict company bankruptcy with this model are:

$Z < 1.81$	: Potential for bankruptcy
$1.81 < Z < 2.99$	: Gray area or gray area
$Z > 2.99$	: Not bankrupt

There are differences in the calculations for companies that are not manufacturing companies. If there are five indicators for manufacturing companies that must be measured, then for non-manufacturing companies, including banking, use four indicators with different units of measurement. The use of Altman's Z Score for banking companies is as follows:

$$Z = 6.56(X1) + 3.26(X2) + 6.72(X3) + 1.05(X4) \quad (2)$$

Information:
1. Working Capital to Total Assets (X1)
2. Retained Earnings to Total Assets (X2)
3. Earnings before Interest & Taxes to Total Assets (X3)
4. Market Value of Equity to Book Value of Debt (X4)

The criteria used to assess whether the company has the potential to go bankrupt or not are as follows:

$Z < 1.10$	: Potential for bankruptcy
$1.10 < Z < 2.90$	: Gray area or doubtful area
$Z > 2.90$	: Not bankrupt

Systemic Impact Bank

The banking industry is an industry that has very high restrictions. Banking in Indonesia is closely monitored by Bank Indonesia on a macroprudential basis, supervised by the Financial Services Authority on a microprudential basis and also supervised by the Ministry of Finance. This very tight supervision reflects that the banking industry is a very important industry for a country's economy.

To facilitate such banking supervision, Bank Indonesia and the Financial Services Authority established a special category, namely the category of banks with systemic impact in Indonesia. Systemic impact bank itself is defined as a bank that is able to contribute to the Indonesian economy, so that if a problem occurs in a bank that is included in the systemic impact bank category, it can certainly have an impact on the economy in general (Wijoyo, 2015).

The Financial Services Authority further explained that the determination of a systemic impact bank contains banks of a certain size (not BUKU I and BUKU II) and has a certain size such as the number of bank branch offices that are able to operate, increase in total assets, total credit and third party funds. Banks that fall into the systemic impact bank category are required to make an emergency exit plan and recovery plan, better known as a bail-in. The owners and management of the bank (bank management) have the responsibility for the business continuity of the bank they manage.

Bank Indonesia together with the Financial Services Authority have established 15 systemic impact banks in Indonesia. The fifteen banks in the category of systemic impact banks in Indonesia are:

Table 1
Systemic Impact Banks in Indonesia
As of December 2017*

No	Bank Entity	Total Asset	No	Bank Entity	Total Asset
1	BRI	Rp 1,126,2	8	Danamon	IDR 178.25
2	Mandiri	Rp 1,124.7	9	Maybank Indonesia	Rp 173.25
3	BCA	IDR 750.3	10	OCBC NISP	Rp 153.8
4	BNI	Rp 709.33	11	Permata	Rp 148.09
5	CIMB Niaga	Rp 266.3	12	Tokyo Mitsubishi	Rp 147.01
6	BTN	Rp 261.36	13	BJB	IDR 108.4
7	Panin	IDR 200.9	14	HSBC	Rp 101.01
			15	Bukopin	IDR 100.08

* Total assets in trillion rupiah
Source: Various sources, processed

The determination of the number of banks with systemic impact is not only the authority of Bank Indonesia and the Financial Services Authority, but is also based on input from the government. The fifteen banks that fall into the category of systemic impact banks in Indonesia will practically receive attention and supervision from Bank Indonesia, the Financial Services Authority and the government.

The number of banks determined by the Financial Services Authority and Bank Indonesia which are included in the category of banks with systemic impact is not the same from year to year, but has a tendency to continue to increase in number. From 2011 to 2016, the Financial Services Authority and Bank Indonesia determined that there were no more than 12 banks with systemic impact in Indonesia. However, this number continues to increase until now there are 15 banks that fall into the category of systemic impact.

Empirical Study

Several studies on bankruptcies in companies or banks have been carried out both in Indonesia and abroad. In the following, we will present several studies which are the main basis for conducting research on prediction of bankruptcy in banks that fall into the category of systemic impact.

Sari and Yulianto (2018) investigated the accuracy of predictive measurements using two methods at once. The method used is the springgate and zmijewski methods for real estate companies listed on the Indonesia Stock Exchange (IDX). The time span was taken between 2013 and 2015. The research conducted came to the conclusion that the zmijewski model has

an accuracy of up to 100 percent compared to using the springate method. By using the springate method, the accuracy obtained is at 66 percent.

Ambarwati, et al (2016) in their research on a company located in Bandar Lampung, using four approaches to measuring bankruptcy prediction, namely: Altman Z Score, Springate, Zmijewski and Fulmer came to the conclusion that the four models used came to different conclusions. . Using the Z Score Altman approach, the company under study was declared bankrupt, using Zmijewski the company was declared healthy but with negative results, using Springate, the company was declared bankrupt and using the Fulmer method the company was declared bankrupt.

The main difference between this research and previous research is that this research is not comparative or comparing which calculation technique is better. This study uses the Altman measurement method with the consideration that this analysis technique is the most commonly used technique by both practitioners and academics in measuring the potential for bankruptcy of a company. In addition, this research is more of an empirical research, which emphasizes more on the practical side of the use of theory compared to comparative research.

3. Research Method

The type of research used is quantitative research, namely research in which all decisions and results are based on numerical calculations. This study uses data released by both the Financial Services Authority and the bank concerned. Thus this study uses secondary data types. In addition to using financial statement data for each bank, to strengthen the analysis, this study also uses data taken from various sources such as literature data or data taken from literature studies.

The measure that is often used in the analysis of financial statements is the "ratio". According to Riyanto (1999) the ratio is actually just a tool expressed in the form of an arithmetic model that can be used to explain the relationship between two kinds of financial data. According to Harahap (2004) states that financial ratios are numbers obtained from the comparison of one financial statement post with other items that have a relevant and significant (meaningful) relationship. Regarding the Z-Score analysis, Altman stated that there are five ratios that can be combined to see the difference between healthy companies or will have bankruptcy problems. These ratios are as follows:

a. Working Capital to Assets Ratio

This ratio shows the company's ability to generate net working capital from the total assets owned. This ratio is calculated by dividing net working capital by total assets. According to Supardi (2003) this ratio is basically a liquidity ratio that regulates the company's ability to meet short-term obligations. Net working capital is calculated by means of current assets minus current liabilities. Negative net working capital is likely to face problems in covering its short-term obligations because there are no current assets that are sufficient to cover these obligations. On the other hand, companies with positive net working capital rarely have difficulty in paying off their obligations.

The formula for this ratio is as follows:

Ratio X1= (Working Capital)/(Total Assets)

b. Retained Earnings in Total Assets Ratio

This ratio shows the company's ability to generate retained earnings from the company's total assets. Retained earnings are profits that are not distributed to shareholders. Retained earnings show how much of the company's income is not paid out in the form of dividends to shareholders. Retained earnings reported in the balance sheet are not cash

and are 'not available' for the payment of dividends and others. The formula for this ratio is as follows:

Ratio X2= (Retained Earnings)/(Total Assets)

c. Earnings Before Interest and Taxes to Total Assets Ratio

According to Supardi (2003) this ratio is a ratio that measures the ability to generate profits from the assets used. This ratio is a ratio used to measure the profitability / profitability of a company. This ratio shows the company's ability to generate profits as measured by the amount of profit before deducting interest and taxes compared to total assets. The formula for this ratio is as follows:

Ratio X3= EBIT/(Total Assets)

d. Market Value of Equity to Total Debt Ratio

According to Adnan (2001) this ratio is a ratio that measures the company's ability to provide guarantees for each of its debts through its own capital. This ratio is used to measure the company's ability to meet its own capital obligations. The formula for this ratio is as follows:

Ratio X4=(Equity Capital)/(Total Debt)

This study focuses on systemic impact banks in Indonesia. According to data released by the Financial Services Authority in 2019, 2020 and 2021, there are 15 banks with systemic impact in Indonesia. The fifteen systemic impact banks are: Bank Rakyat Indonesia, Bank Mandiri, Bank Central Asia, Bank Negara Indonesia, Bank CIMB Niaga, Bank Tabungan Negara, Bank Panin, Bank Danamon, Bank Maybank Indonesia, Bank OCBS NISP, Bank Permata, Bank BJB, HSBC Indonesia, and Bank Bukopin. In the list issued by the Financial Services Authority, it appears that not only national banks are included in systemic impact banks but also foreign private banks, so that sampling using the criteria for systemic impact banks is quite comprehensive and represents the entire group of banks operating in Indonesia. Bank of Tokyo Mitsubishi was not included in this study due to insufficient data available.

This research approach uses Z Altman calculation. This type of research is a non-parametric statistical type of research, so there are no requirements or assumptions that exist in research using parametric statistics such as having to use classical assumption tests and so on. With these considerations, both the population and the sample in this study are the same, so the sample of this study is the fifteen systemic impact banks in Indonesia based on data released by the Financial Services Authority.

4. Results and Discussion

4.1. Results

Several calculations and financial data are needed to be able to start the calculation using this model using the Z Score developed by Altman. Referring to equation (2) which is used in the basis for calculating potential bankruptcy, some data that must be available are: total assets, working capital, retained earnings, EBIT, own capital and total debt. The collected data is then tabulated to calculate the required ratios. The following is the calculation of the X1, X2, X3 and X4 ratios along with the resulting Z Score values for 2019, 2020 and 2021:

Table 2
X1, X2, X3, X4 and Z Score Ratio Calculation Results in 2019

Bank	X1 . Ratio	X2 . ratio	X3 . Ratio	X4 . Ratio	Z Score
BRI	0.1459	0.1327	0.0319	0.1641	1.7772
Mandiri	0.1672	0.1222	0.0287	0.1917	1.8903

BCA	0.1860	0.1703	0.0382	0.2189	2.2627
BNI	0.1513	0.1021	0.0234	0.1683	1.6598
CIMB Niaga	0.1571	0.1143	0.0173	0.1748	1.7038
BTN	0.0748	0.0011	0.0013	0.0730	0.5807
Panin	0.2115	0.1458	0.0211	0.2357	2.2529
Danamon	0.1967	0.1788	0.0267	0.2573	2.3239
Maybank Indonesia	0.1525	0.0863	0.0116	0.1633	1.5318
OCBC NISP	0.1559	0.0984	0.0215	0.1744	1.6717
Permata	0.1434	0.0040	0.0125	0.1584	1.2049
BJB	0.0973	0.0248	0.0164	0.0940	0.9291
HSBC	0.1758	0.0642	0.0271	0.1892	1.7440
Bukopin	0.0868	0.0337	0.0012	0.0738	0.7657

Source: Data, processed

Table 3
X1, X2, X3, X4 and Z Score Ratio Calculation Results in 2020

Bank	X1 . Ratio	X2 . ratio	X3 . Ratio	X4 . Ratio	Z Score
BRI	0.1289	0.1153	0.0184	0.1420	1.4945
Mandiri	0.1361	0.0986	0.0157	0.1506	1.4787
BCA	0.1650	0.1498	0.0305	0.1903	1.9763
BNI	0.1260	0.0784	0.0053	0.1350	1.2602
CIMB Niaga	0.1397	0.0991	0.0097	0.1546	1.4682
BTN	0.0691	0.0048	0.0062	0.0516	0.5663
Panin	0.2128	0.1433	0.0198	0.124	2.2542
Danamon	0.1779	0.1557	0.0084	0.2247	1.9676
Maybank Indonesia	0.1462	0.0828	0.0080	0.1601	1.4516
OCBC NISP	0.1465	0.0952	0.0134	0.1635	1.5339
Permata	0.2169	0.0034	0.0081	0.2546	1.7566
BJB	0.0958	0.0247	0.0159	0.0853	0.9061
HSBC	0.1844	0.0704	0.0157	0.2026	1.7581
Bukopin	0.0906	-0.0183	-0.0507	0.0802	0.2782

Source: Data, processed

Table 4
X1, X2, X3, X4 and Z Score Ratio Calculation Results in 2021

Bank	X1 . Ratio	X2 . ratio	X3 . Ratio	X4 . Ratio	Z Score
BRI	0.1536	0.1157	0.0249	0.1803	1.7421
Mandiri	0.1292	0.1012	0.0234	0.1419	1.4844
BCA	0.1563	0.1468	0.0317	0.1792	1.9061
BNI	0.1334	0.8001	0.0129	0.1371	1.3682
CIMB Niaga	0.1330	0.1000	0.0160	0.1467	1.4609
BTN	0.0691	0.0068	0.0080	0.0528	0.5852
Panin	0.2226	0.1625	0.0171	0.2689	2.3882
Danamon	0.1804	0.1658	0.0100	0.2311	2.0351
Maybank Indonesia	0.1542	0.0939	0.0096	0.1743	1.5662
OCBC NISP	0.1514	0.1032	0.0149	0.1705	1.6093
Permata	0.1928	0.0076	0.0066	0.2220	1.5682
BJB	0.0982	0.0244	0.0168	0.0760	0.9175
HSBC	0.1734	0.0713	0.0149	0.1898	1.6698
Bukopin	0.1351	-0.0434	-0.0345	0.1315	0.6510

Source: Data, processed

Based on the Z Score value that has been obtained from these calculations, it can be seen how the condition and status of each bank during this pandemic period can be seen. The following are the results of the assessment based on the calculation of the Z Score obtained.

Table 5
Conclusion of Z Score Calculation Results

Bank	2019	2020	year 2021
BRI	Gray Area	Gray Area	Gray Area
Mandiri	Gray Area	Gray Area	Gray Area
BCA	Gray Area	Gray Area	Gray Area
BNI	Gray Area	Gray Area	Gray Area
CIMB Niaga	Gray Area	Gray Area	Gray Area
BTN	Potentially Bankrupt	Potentially Bankrupt	Potentially Bankrupt
Panin	Gray Area	Gray Area	Gray Area
Danamon	Gray Area	Gray Area	Gray Area
Maybank Indonesia	Gray Area	Gray Area	Gray Area
OCBC NISP	Gray Area	Gray Area	Gray Area
Permata	Gray Area	Gray Area	Gray Area
BJB	Potentially Bankrupt	Potentially Bankrupt	Potentially Bankrupt
HSBC	Gray Area	Gray Area	Gray Area
Bukopin	Potentially Bankrupt	Potentially Bankrupt	Potentially Bankrupt

Source: Data, processed

4.2. Discussion

The pandemic that occurred undeniably brought a comprehensive impact on all sectors of the economy. Banking, as one of the business entities that is highly dependent on economic conditions, will certainly be affected by the economic condition that experienced a contraction. Banks in general will find it difficult to extend credit when economic conditions are deteriorating. The credit performance that was already disbursed by banks before the pandemic period also showed an unsatisfactory performance. Due to the economic contraction that has hampered many businesses, bank debtors prefer to apply for a deferral of credit payments compared to paying off the credit they have taken. This condition is very visible from the Z Score obtained where there is not a single systemic impact bank in Indonesia that is really not experiencing financial difficulties. In fact, there are three banks that fall into the category of risk of bankruptcy.

Facing unfavorable economic conditions from a business perspective, banks need to pay attention to risk mitigation, both external and internal risks. Diversifying banking financial products and services is a must for banking. Banking is advised not only to focus on one type of service or one particular market segmentation. The option to conduct a merger or business merger between two or more banks can be an option for banks to strengthen both capital and an accessible market. With stronger capital, banks are also more flexible to run their business.

In general, Indonesian banking conditions are quite good in dealing with the effects of this pandemic. During the three years of the pandemic, only three banks have the potential to go bankrupt, the rest are in better condition. The government's role in the banking business in Indonesia is very large. One of the things that the government does to ensure the banking business in Indonesia runs well is to provide a blanket guarantee for banking products in Indonesia with pre-determined requirements. In short, the government provides guarantees to

owners of savings and deposits in banks that they will not lose their money in the bank if the bank is closed or liquidated.

5. Conclusion

Indonesia's banking conditions during the pandemic occurred from 2019 to 2021 and resulted in an economic recession which was marked by negative economic growth twice in a row, having an impact on banking conditions in general in Indonesia. Of the fourteen systemic impact banks included in this study, it shows that there are three banks that have the potential to go bankrupt in 2019 to 2021. The rest are in the gray category and there are no banks that are not in a state of potential bankruptcy. The findings in this study indicate that risk mitigation in banking is an absolute must in any condition

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