



## Altman Z-Score Analysis Model On Potential Bankruptcy At PT Permodalan Nasional Madani In 2017-2021

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### ABSTRACT

The rapid development of the business world makes company management need to develop a company plan or strategy in order to achieve its goals and the company is able to move quickly to anticipate existing changes. The government's target to increase the number of NoA to 20 million customers in 2024 is not easy. This study aims to determine the value of financial ratios and prove the results of the Altman Z-Score Analysis Model on the potential bankruptcy of PT Permodalan Nasional Madani. This study used a quantitative descriptive approach using Altman Z-Score Modification calculation. The analysis used is the Financial Statements of PT. Permodalan Nasional Madani with samples of Financial Statements from 2017-2021. Data collection techniques are carried out by collecting data based on past data and conducting literature studies by searching library sources. The results showed that there was no potential for bankruptcy in PT Permodalan Nasional Madani based on the analysis of the altman Z-Score from 2017-2021

**Keywords:** *Altman Z-Score, Bankruptcy*

[Altman Z-Score, Bankruptcy](#)

### INTRODUCTION

The higher business competition can lead to setbacks for companies that are unable to maintain their current existence. According to (Wulandari et al., 2017) that the high level of fast and competitive business competition is due to globalization and the advancement of technology at this time.

The rapid development of the business world makes company management need to develop a company plan or strategy in order to achieve its goals and the company is able to move quickly to anticipate existing changes according to (Wulandari et al., 2017). The company's ability to maintain its existence in the midst of competition is highly dependent on the financial performance of its company. The efficiency and effectiveness of the company's financial performance certainly helps the company to achieve its goals optimally, especially in profit or profitability.

There are various ways to measure the company's financial performance, one of which is through the Financial Statements. One indicator that can be used to determine the level of bankruptcy is financial indicators. The method that can be used in analyzing bankruptcy is the Altman Z-Score approach model.

In the Altman Z Score method there are 4 ratios that already include measuring the company's financial performance. According to (Simanjuntak et al., 2017) Financial ratios are important ratios for

analyzing the financial condition of a company. There are four groups of financial ratios that can be recognized: (1) Liquidity ratios, useful for identifying the entity's ability to fund its operations and meet financial commitments when it must; (2) Activity ratios, referring to the company's capacity to carry out daily routines or the ability to sell, collect receivables, and utilize existing assets; (3) Profitability ratios, aiming to measure the entity's capability to make profits through various policies and decisions implemented; and (4) Solvency ratios, assessing the depth of financial support for company assets originating from debt (Munawir, 2012). In the context of this research, the ratios used include liquidity ratios, financial leverage ratios, and profitability ratios.

PT Permodalan Nasional Madani (PNM) is a company owned by the state, also known as a State-Owned Enterprise (BUMN), which is engaged in the Financial Services sector. PT PNM was established on June 1, 1999 with the intention of supporting the progress of business actors on a micro, small, medium and cooperative scale (UMKMK). The vision of PT Permodalan Nasional Madani (PNM) is to become a leading funding institution in increasing added value in a sustainable manner for UMKMK, based on the principles of Good Corporate Governance (GCG). PT Permodalan Nasional Madani's mission consists of improving business feasibility and entrepreneurial capabilities within the MSMEK sector, as well as expanding access to funding sources for MSMEK to advance community welfare.

PT Permodalan Nasional Madani still exists among the community through its products, namely ULaMM and Mekaar. PT Permodalan Nasional Madani until now continues to strive to be able to channel financing, especially through PNM Mekaar. PT PNM continues to strive to increase the number of customers every year. The progress of the growth in the number of customers at PT PNM Mekaar is as follows from 2017-2021:

**Table 1. Data on the number of NoA customers of PT.PNM in 2017-2021**

Year	Number of Customer Noa
2017	2.299.454
2018	4.057.129
2019	6.043.840
2020	7.802.806
2021	11.011.194

When viewed from the table 1 the growth of customers from 2017 to 2021 there is a continuous increase. This shows that PNM Mekaar is able to continue to grow every period. This growth has received special attention from the government, namely it is hoped that PNM will be able to reach 20 million customers by 2024. With this, the President Director of PT Permodalan Nasional Madani hopes that PT PNM can reach 16 million customers by the end of 2023. The existence of a target from the government for PT Permodalan Nasional Madani towards 20 million customers is certainly not an easy thing for the company. PNM needs to conduct a review of financial performance to determine the Company's ability to achieve the desired target. The magnitude of the target given will certainly make PNM make extra treatment related to its financial management. This is because there will be greater costs to reach the 20 million customers. One of the impacts that will occur is that PNM needs to increase its infrastructure such as increasing the number of mekaar offices or even increasing the number of employee resources, especially in Account Officers (AO) so that distribution is faster and more numerous.

When viewed from the growth of PT Permodalan Nasional Madani's profit from 2017 to 2021. There are fluctuations. Especially in 2020 where there was a decrease in profits due to the covid-19 pandemic.

**Table 2. PT.PNM Profit Growth Data 2017-2021**

<b>Year</b>	<b>Profit for the Year</b>
2017	25.379.969.763
2018	70.958.044.578
2019	968.256.719.834
2020	351.418.888.008
2021	842.328.769.367

Before the pandemic, When viewed from the table 2 PT Permodalan Nasional Madani's profit seemed to continue to increase until in 2019 there was a surge in income of Rp 968,256,719,834 and in 2020 due to the occurrence of pandemic conditions the profit of PT Permodalan Nasional Madani decreased significantly to 351,418,888,008. This is certainly a special concern because it is necessary to explore the impact of this decline on the implementation of the PSBB or others. In fact, not a few of PT Permodalan Nasional Madani's customers went out of business as a result of the decline in sales at that time.

After knowing the profit of PT Permodalan Nasional Madani from 2017-2021. The condition of Non Performing Loan (NPL) at PT Permodalan Nasional Madani from 2017- 2021.

**Table 3. NPL Decline Data of PT PNM 2017-2021**

<b>Year</b>	<b>Non Performing Loan (NPL)</b>
2017	2,36%
2018	1,48%
2019	1,34%
2020	1,23%
2021	0,69%

When viewed from the table 3 condition of the Non Performing Loan (NPL) at PT Permodalan Nasional Madani from 2017-2021 that the NPL continues to decline and is getting better even in pandemic conditions. This is inversely proportional to income which should be if NPLs decrease, it should be followed by increased income due to the lack of customers who cannot pay. Therefore, it is necessary to further assess the financial performance of PT Permodalan Nasional Madani.

Furthermore, in terms of costs, PT Permodalan Nasional Madani from 2017 to 2021 is as follows:

Year	Operating Expenses
2017	1.438.667.461.626
2018	2.187.113.674.798
2019	3.206.144.938.186
2020	3.857.516.850.870
2021	5.370.056.675.150

**Table 4. Operating Expenses Data of PT PNM 2017-2021**

When viewed in terms of costs, there was a continuous increase from 2017-2021. This needs to be a concern because a significant increase occurred from 2017 to 2021. When viewed table 4 Operating expenses are expected to increase due to the growth in salaries and benefits expenses and losses on write-downs of receivables. This needs to be addressed so as not to erode profits too much each year.

Seeing from the existing data and the explanation above, therefore researchers are interested in analyzing the value of financial ratios based on the Altman Z-Score analysis model and the results of the Altman Z-Score analysis model at PT Permodalan Nasional Madani.

## LITERATURE REVIEW

### Financial Performance

According to (Munawir, 2012) The financial performance of a company is one of the bases for evaluating the company's financial situation, which is carried out through an analysis of the company's financial ratios. According to (Rudianto, 2013) The success or achievement of the company's management in carrying out its duties to manage the company's assets efficiently during a certain period of time.

Financial performance involves analyzing the available financial statements of the relevant company. This information is reflected in the data contained in the statement of financial position, statement of comprehensive income, statement of changes in equity, cash flow statement, and also the accompanying notes on financial statements. This is also in accordance with what is said by (Fahmi, 2012) financial performance refers to the analysis carried out to evaluate the extent to which the company has implemented the principles of financial management appropriately and correctly.

In accordance with (Agustin et al., 2020) Financial performance is an evaluation of the efficiency and effectiveness of the company to make a profit so that it can be seen the condition of the company's growth and development. The potential growth and financial journey of the company can be seen or identified based on the resources that are utilized properly. Good company performance can also be a measure of success in a company.

Therefore it can be said that financial performance is an official approach carried out by a company to assess the achievement of its success in creating profits, with the aim of identifying prospects, growth, and development potential contained in the company by utilizing existing resources.

### Financial Report

The preparation of financial statements is important for companies, because it must be carried out based on applicable rules and standards. Every company has the responsibility to compile and

present their financial information within a certain period of time, which will later be analyzed to reveal the current situation and position of the company. In accordance with (Riesmiyantiningtias & Siagian, 2020) Financial statements can be interpreted as an analytical tool that relates mathematically to the items in the financial statements so that it can provide information on the company's position to assist in decision making in achieving company targets.

### Altman Z Score

Rudianto (2013) explains that Z-Score analysis is a model used to predict the risk of bankruptcy of a company by combining several common financial ratios with different weights between them. This Z-Score analysis was first proposed by Edward I. Altman as a result of his research in 1968. The first Z-Score formula developed by Altman in 1968 is as follows:

$$\mathbf{Z\text{-Score} = 1,2X1 + 1,4X2 + 3,3X3 + 0,6X4 + 1,0X5}$$

In this structure, companies that score  $Z > 2.99$  will be classified as companies that are in a healthy condition. Meanwhile, companies that score  $Z < 1.81$  will be classified as companies that have the potential for bankruptcy. Furthermore, companies with scores between 1.81 and 2.99 will be grouped as companies in neutral or unclear areas. (Muslich, 2008).

In the opinion of Prihadi (2008), given the limitations in the application of Z-Score only to manufacturing companies that make a public offering of shares, Altman then revised the ratio used. He removed the market value of equity and replaced it with the book value of equity. With this change, he developed a model for manufacturing companies that are not listed on the stock exchange or are private, which is as follows:

$$\mathbf{Z = 0,717X1 + 0,874X2 + 3,107X3 + 0,420X4 + 0,998X5}$$

In this framework, companies that obtain a Z score of  $> 2.90$  are considered as companies in a very healthy condition, while companies that obtain a Z score of  $< 1.20$  are categorized as companies that have the potential to face bankruptcy. Meanwhile, the score range between 1.20 to 2.90 is used to classify companies in the gray area category, as explained by Prihadi (2008).

The latest version of the Z-Score formula developed by Altman proved to be very flexible because it can be applied to various fields of business of the company, regardless of its status that has gone public or not (Rudianto, 2013). In this last Altman Z-Score model, the Sales to Total Assets component is removed with the aim of eliminating the influence of the industry, so that the size of the company related to assets can be neutralized. The third Altman Z-Score model is designed to be used for various types of companies (Prihadi, 2008), as described below:

$$\mathbf{Z = 6,56X1 + 3,26X2 + 6,72X3 + 1,05X4}$$

Within the framework of this model, a company that scores  $Z > 2.90$  will be declared as a very healthy company, while a company with a score of  $Z < 1.20$  is considered potentially bankrupt. Furthermore, scores ranging from 1.20 to 2.90 will categorize companies in the gray area or doubt zone (Prihadi, 2008). According to Sawir (2001), the Altman Z-Score model analysis has advantages and disadvantages. The advantage lies in the ability to combine various ratios into one meaningful model. It is a multivariate analysis that is able to see the relationship between specific ratios that potentially affect the company's financial performance.

## METHODOLOGY

In this research, the aim is to examine the company's condition from the perspective of bankruptcy. Therefore, this research is of a quantitative descriptive nature, which is an approach that focuses on independently examining the variables in question. The unit of analysis used in this research

to obtain data is the organizational unit of analysis, namely PT Permodalan Nasional Madani. To delve into the issues related to the phenomenon to be studied, the object of study is financial reports of the company that can be accessed through the official website [www.pnm.co.id](http://www.pnm.co.id), from 2017 to 2021.

In this research, operational variables are the elaboration of research variables, dimensions, and indicators used to analyze or measure the variables. There are 2 Operational Variables, namely Independent Variables and Dependent Variables. According to Purwanto (2019), Independent Variables are conditions that, when present, will influence other conditions or values, while Dependent Variables are variables influenced by independent variables, so the condition of these variables depends on the condition of the independent variables. Therefore, the Independent Variable in this research is Altman Z-Score, and its Dependent Variable is Bankruptcy.

The population in this study consists of PT Permodalan Nasional Madani, and the years under investigation are from 2017 to 2021. The sample for this research includes audited financial reports from the years 2017 to 2021.

The data source for this research is the financial reports of PT Permodalan Nasional Madani that have been published for the period 2017-2021 and can be accessed through [www.pnm.co.id](http://www.pnm.co.id). The availability of high-quality data sources is an important aspect of this research.

The data collection method in this research involves collecting data by utilizing various types of documents. This technique offers the advantage of having an unlimited availability of data, allowing researchers to obtain information about past events. The data collected includes audited and published financial reports by PT Permodalan Nasional Madani for the period 2017-2021.

The literature review method is a data collection technique that involves searching for sources of literature such as books, literature, notes, journals, and relevant reports related to the research problem. This approach is used to analyze and evaluate the issues at hand and is capable of finding solutions based on the information available in the research.

The data processing method for this research involves collecting financial reports from the years 2017-2021 from the official website of PT PNM. Subsequently, financial report analysis is conducted using the Altman Z-Score ratios based on the applicable guidelines.

## RESULTS

**Table 5. Working Capital to Total Assets Ratio Results**

	2017	2018	2019	2020	2021
Modal Kerja	7.587.507.580.343	9.928.238.258.152	14.608.604.258.735	18.682.475.683.547	23.064.455.339.622
Total Aset	11.393.257.506.661	18.248.569.878.713	25.924.004.958.402	31.664.889.050.308	43.712.294.587.564
X1	0,665964	0,544055	0,563516	0,590006	0,527642

From the results of the table 5 calculations, it is known that there are fluctuations in the liquidity ratio at PT Permodalan Nasional Madani (PNM) for 5 years. In 2017 to 2018 the ratio showed a decrease from 0.66 to 0.54. This shows that every Rp 1.00 of total assets can guarantee working capital of 0.66 in 2017 and 0.54 in 2018. In 2019 and 2020 the liquidity ratio increased again to 0.56 and 0.59. In 2019, the results showed that every Rp 1.00 of total assets could guarantee working capital of 0.56 and 0.59 in 2020. In 2021 there was another decrease in the liquidity ratio to 0.53

**Table 6. Results of Retained Earnings to Total Assets Ratio**

	2017	2018	2019	2020	2021
Laba Ditahan	35.384.576.222	65.960.460.163	973.231.336.153	1.204.819.762.884	2.045.597.843.110
Total Aset	11.393.257.506.661	18.248.569.878.713	25.924.004.958.402	31.664.889.050.308	43.712.294.587.564
X2	0,003105747	0,003614555	0,037542	0,038049	0,046797

From the results of the calculations table 6, it is obtained that there is an increase in the profitability ratio every year in a period of 5 years from 2017-2021. In 2017 to 2018 there was an increase from 0.0031 to 0.0036. This can be obtained information that every Rp 1.00 of Total Assets is able to generate Retained Earnings of around 0.0031 in 2017 and 0.0036 in 2018. Then in 2019 there was a significant increase back from 0.0036 to 0.037. This shows that every Rp 1.00 of total assets is able to generate retained earnings of 0.037 in 2019. In 2020 there was an increase from 0.037 to 0.038 which means that every Rp 1.00 of total assets is able to generate 0.038 Retained Earnings.

**Table 8. Ratio of Stock Market Value to Total Liabilities**

	2017	2018	2019	2020	2021
Nilai Buku Ekuitas	1.814.950.982.905	1.893.578.988.732	2.864.492.737.701	5.586.909.801.239	6.437.953.904.890
Total Liabilitas	9.578.306.523.756	16.354.990.889.980	23.059.512.220.701	26.077.979.249.069	37.274.340.682.674
X4	0,189486	0,11578	0,124222	0,214239	0,172718

When viewed from the calculation table 8, there have been fluctuations in the solvency ratio at PT Permodalan Nasional Madani for 5 consecutive years. In 2017 the solvency ratio was 0.189 and decreased in 2018 to 0.115 then there was an increase again in 2019 to 0.124. In 2020 there was a significant increase in the ratio seen in the chart, which was to 0.214 and fell back in 2021 to 0.172.

**Table 9. Bankruptcy Prediction Results (Financial Distress)**

	2017	2018	2019	2020	2021
X1	0,66	0,54	0,56	0,59	0,52
X2	0,0031	0,0036	0,0375	0,0380	0,0467
X3	0,0061	0,0054	0,0498	0,0126	0,0248
X4	0,19	0,12	0,12	0,21	0,17
Z"-Score	4,62	3,73	4,28	4,30	3,96
Category	Healthy	Healthy	Healthy	Healthy	Healthy

When viewed from the calculation table 9, there have been fluctuations in the solvency ratio at PT Permodalan Nasional Madani for 5 consecutive years. In 2017 the solvency ratio was 0.189 and decreased in 2018 to 0.115 then increased again in 2019 to 0.124. In 2020 there was a significant increase in the ratio seen in the graph, namely to 0.214 and fell back in 2021 to 0.172.

Based on the calculation of the Z-Score 4 Variable analysis that in 2017-2021 shows PT Permodalan Nasional Madani is in a healthy condition (not bankrupt). Although the table shows an increase and decrease in the Z score value, PT PNM is still in a safe and reasonable condition that does not have the potential to go bankrupt. Where the company category If the Z value > 2.90, then the company is classified as being in a healthy condition. If the Z score is < 1.20, the company is considered to have the potential for bankruptcy, and if the Z value is between 1.20 and 2.90, the company is categorized in a neutral area or gray condition. Based on the table above, the highest Z-Score value was in 2017.

## **DISCUSSION**

Based on calculations conducted at PT Permodalan Nasional Madani using the Z-Score approach from 2017 to 2021, the company's condition is categorized as healthy or not bankrupt. This is because the Z-Score value is greater than 2.90, which falls into the non-bankrupt category. According to the graph, in 2017, the Z-Score value was 4.62. The high Z-Score value in 2017 is due to the high X1 value compared to other years, and it is also accompanied by the ratios of X3 and X4.

The healthy condition maintained by PT PNM should be consistently upheld to ensure its existence remains intact and to prevent bankruptcy. This, in turn, can support the fact that achieving the government's target for PT PNM of 20 million customers by 2024 is not an issue.

The condition of PT Permodalan Nasional Madani, categorized as healthy, is evident when looking at the X1 ratio from 2017 to 2021. During this period, PNM's working capital consistently increased, accompanied by its total assets. Calculations require an analysis of current liabilities and current assets at PT PNM, indicating that as current assets increase compared to current liabilities, the company becomes more liquid and capable of meeting its short-term debt obligations. The continuous growth of working capital, along with increasing assets, enables the company to efficiently carry out its operations. When operational execution is optimal, revenue also increases, allowing PNM to repay its short-term debts and generate profits. This demonstrates that PNM effectively utilizes its assets for its operational activities.

According to Windi Novianti (2018), working capital is the fund necessary for a company to cover its day-to-day operational expenses and is expected to be repayable in the short term. In 2017, with total assets amounting to 11,393,257, PT PNM was able to generate working capital of 7,587,507.

Furthermore, when examining its Profitability ratio (X2), it is evident that there has been a continuous increase from 2017 to 2021. This ratio serves as internal capital typically found in the equity section of the financial statements for shareholders. The higher the capital, the less the company relies on its debts. According to Idi & Borolla (2021), if the resulting ratio is high, the company's profits are capable of safeguarding assets and dividend payments, reducing the risk of bankruptcy. This can be observed in the Profitability ratio graph of PT PNM, where the ratio has consistently increased from 0.0031057 in 2017 to 0.0467 in 2021. This indicates that PT PNM possesses strong internal capital and is not heavily reliant on debt. PNM's performance has improved compared to 2016, experiencing a 46.90% increase. A positive ratio value means that the company can generate profits based on its assets, and the company's liabilities do not increase to fund its operational activities.

Next, when examining the Profitability ratio (X3), there are fluctuations from 2017 to 2021. According to Wulandari et al. (2017), Profitability ratio represents the profit obtained from the assets or assets owned by the company before taxes and interest. Profitability ratio is crucial because it helps measure the profit position of each year, which can be used to evaluate the company's earnings. The highest ratio was in 2019, amounting to 0.049, and the lowest ratio was in 2018. The highest ratio in



2019 was due to the largest profit obtained at that time, which amounted to 1 trillion, followed by a 25 trillion increase in total assets. Overall, PT PNM has no negative values, and its profitability continues to increase each year.

## CONCLUSION

Based on the results of the research and discussion carried out, the following conclusions can be drawn: (1) Based on the value of the ratio of Working Capital to Total Assets (WCTA) that in 2017-2021 the highest WCTA ratio value was in 2017 of 0.67. Then in 2018 the ratio value decreased to 0.544. In 2019 the WCTA ratio was 0.563. In 2020 the ratio value was 0.590 and in 2021 the ratio fell to 0.527. This shows that every IDR 1.00 of total assets can guarantee working capital of 0.67. (2) Based on the X2 ratio value, it is found that the highest ratio is in 2021 of 0.046. This is due to the increasing value of total assets owned by the company which is also followed by Retained Earnings. Then in 2020 the ratio value was 0.038. The lowest ratio was in 2017 because the value of total assets and retained earnings was the smallest among other years. However, the condition is still said to be safe because the ratio value at PT Permodalan Nasional Madani is not negative. (3) The X3 Ratio value obtained the highest ratio value in 2019 with a value of 0.049. This is because the gross profit value in 2019 is the largest among other ratios. (4) Based on this research, the highest X4 ratio value is in 2020, which is 0.214. (5) Based on the Z-Score value from 2017-2021, the highest ratio is in 2017. This is due to the high value of WCTA (X1) in 2017 which can affect the Z-Score value of PT Permodalan Nasional Madani. By referring to the Z-Score value, it can be concluded that the condition of PT Permodalan Nasional Madani is still in the healthy category or not potentially bankrupt. This is because there is no Z-Score value that shows a negative value.

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