

ANALYSIS ALTMAN Z-SCORE TO PREDICT BANKRUPTCY IN PT RAMAYANA LESTARI SENTOSA TBK

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Abstract

The objective of this study is to ascertain the anticipated level of bankruptcy risk at PT Ramayana Lestari Sentosa, Tbk, based on the annual financial reports spanning from 2018 to 2020. The data utilized in this analysis comprise the Financial Statements of PT Ramayana Lestari Sentosa, Tbk for the specified period, accessible through the official website of the Indonesia Stock Exchange, www.idx.com. As PT Ramayana Lestari Sentosa, Tbk is a publicly traded retail company in Indonesia, its financial statements are publicly accessible. The technical analysis employed in this research utilizes the Altman Z-score method, entailing calculations based on the Altman Z-Score formula. The Z-Score calculation for 2018 yielded a result of 6.271, indicating placement within the safe zone. In 2019, it slightly decreased to 6.190, still within the safe zone. Subsequently, in 2020, it experienced a slight increase to 6.211. The Z-Score results for the period spanning 2018 to 2020 suggest that PT Ramayana Lestari Sentosa, Tbk can be classified as a financially healthy company with no evident potential for bankruptcy. However, considering the advancing technology and evolving consumer behaviors, the company may face bankruptcy risks if it fails to adapt and expand its operations into e-commerce platforms.

Keywords: Altman Z-Score, Bankruptcy, Retail.

Introduction

The uncertain economic conditions in Indonesia result in a high risk for a company to experience financial difficulties and even bankruptcy. Bankruptcy is something that is very feared for a company because it will harm many parties (Riesty & Sindy, 2020). Parties who will be harmed in the event of bankruptcy of a company include company owners, investors and other internal parties. Therefore, not a few parties want to know about how much the level of the company can fulfill its obligations in order to survive and how big the risk of bankruptcy is. To obtain information on the level of bankruptcy of a company, it can be assessed from various indicators (Pangkey et al., 2018). One of the main indicators used as the basis for the assessment is the financial statements of the company concerned.

With the development of the industrial revolution 4.0, it will certainly have an impact on industry in Indonesia. The

development of the digital era has brought changes to people's behavior, especially in the retail industry (Wulan et al., 2019). The emergence of the phenomenon of online shopping in society and intense competition has resulted in sales growth for retail issuers experiencing a downward trend in the last five years as a result of changes in people's behavior from traditional ways to more modern ones. Companies that are unable to adapt to the changing times will surely be left behind and will even be experiencing financial difficulties (financial distress). Factors driving the retail industry in Indonesia based on data from the BPS stated that the government had overcome the inflation rate in 2018 below 3.2% (katadata.co.id, 2019).

PT Ramayana Lestari Sentosa Tbk (RALS) a retail company that started its business in 1978. The company offers a variety of fashion products, beauty products, as well as products for household needs and equipment. RALS has succeeded in becoming a retail

company that continues to grow as seen from the opening of new outlets every year. RALS opened its outlets in various cities in Indonesia, currently Ramayana has 116 outlets in 54 cities in Indonesia. The outlets include the Ramayana department store, the Robinson department store and the Cahaya department store (www.Ramayana.co.id). However, with the rapid development of e-commerce, there have been many closures of PT RALS outlets in various regions, this has made the author interested in conducting research on bankruptcy estimates at PT RALS.

Based on the description of the background of the problems above, the authors are interested in conducting research "Analysis Altman Z-Score to Predict Bankruptcy in Pt Ramayana Lestari Sentosa Tbk."

Definition of Financial Statements

Financial statements are a summary of a recording process, which is a summary of financial transactions that occurred during the relevant financial year (Baridwan, 2014) in (Mulyati et al., 2019). In general, financial reports include summaries that describe the financial position, results of operations and cash flows as well as changes in the equity of an organization in a certain period of time.

Definition of Bankruptcy

According to Hasanah (2018) Bankruptcy is the condition of a company because it is unable to pay its debts. 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 is due, is declared bankrupt by a competent court decision, either at his own request or at the request of a creditor.

Based on the definition above, bankruptcy is a situation where a company is unable to fulfill its obligations, both short-term and long-term obligations. Bankruptcy analysis is needed by companies because it can help predict and make decisions in order to avoid conditions where companies cannot fulfill their obligations and are in a position of bankruptcy or liquidity difficulties. Liquidity difficulties begin when a company is unable to pay its obligations when they fall due.

Financial Distress Prediction Analysis

According to Brimantyo et al., (2016) defines *financial distress* as a stage of financial decline that occurs before bankruptcy occurs. This *financial distress* begins with the inability to fulfill its obligations, especially short-term obligations.

There are several indicators that predict company *financial distress*, namely financial reports, current or future cash analysis, and company strategy analysis (Kamal, 2015). Financial reports can be used to predict company bankruptcy by using financial ratios (Kamal, 2015).

Based on the above understanding, *financial distress* is a stage where a company cannot fulfill its obligations and the worst stage of *financial distress* is a company experiencing bankruptcy (Faradila & Aziz, 2016).

Bankruptcy Prediction Benefits

According to Plate and Plat in Arif (2015) *financial distress* prediction information is useful for:

1. Expedite management actions to prevent problems before bankruptcy occurs.
2. Taking merger or take over actions so that the company is better able to pay debts and manage the company well.

3. Provide early warning signs of bankruptcy in the future. *Financial distress* prediction information is useful for interested parties as an early warning of symptoms and problems that occur so that companies and other interested parties can take anticipatory steps to deal with the worst scenario that threatens the survival of the company bankruptcy or liquidation.

Bankruptcy Prediction with Altman Z-Score

According to Vania (2018) research on bankruptcy prediction has developed a lot both internationally and in Indonesia. One of the most popular models used as a bankruptcy prediction analysis tool is the Altman Z-Score prediction model. Altman was the first to implement *Multiple Discriminant Analysis (MDA)*. The linear equation above was created by Altman as a complement to the univariate research conducted by Beaver (1968). At that time, Beaver's research produced an equation that could only predict bankruptcy in a particular company using accounting ratios at that time, so it could not be applied in general. The weakness of Beaver's research was refined by Altman with a Z-Score using Fisher's (1936) in (Hertin & Pitra, 2023) discriminant analysis technique. The result is that the Z-Score is able to predict the potential for bankruptcy of a company on an ongoing and general basis.

Altman Z-score Model for Non Manufacturing Companies

According to Vania (2018) the model called the Z-Score by Altman for the first time is a linear model with weighted financial ratios to maximize the model's ability to make bankruptcy predictions. Altman claims the accuracy of the formula is 95% for a one year prediction

period, with a potential error of between 10% -15%.

The sample used in this study is a non-manufacturing company whose level of bankruptcy can be calculated using the following Altman Z-score method:

$$Z = 6.56 X1 + 3.26 X2 + 6.72 X3 + 1.05 X4$$

Information:

X1 = Net working capital/Total assets

X2 = Retained Earnings/Total Assets

X3 = Profit before interest and tax/Total Assets

X4 = Book value of equity/total liabilities

The Z value is the overall index of the *Multiple discriminant analysis (MDA)* function. According to Altman (1995) in Vania (2018) the above formula can reflect the company's financial performance as follows:

1. Net working capital/Total assets (X1)
Measures the liquidity of assets with respect to company size. Companies that experience continuous losses will have current assets that are shrinking compared to their total assets.
2. Retained earnings/total assets (X2)
Measuring probability that reflects the age of the company and acceptability. Companies that are still new can show low retained earnings because they do not have time to accumulate profits.
3. Profit before interest and tax/Total assets (X3)
Measuring the probability and productivity of company assets apart from taxes and interest, the most influential ratio in predicting bankruptcy because the company's sustainability depends on the *earning power* of its assets.
4. Book value of equity/Total liabilities (X4)
Measures the ratio of equity to total liabilities, showing how much an asset's value can decrease before its

liabilities exceed its assets and a company becomes *insolvent*.

The classification of healthy and bankrupt companies is based on the Z-Score value of the Modified Altman model, namely:

$Z < 1.10$	Possible company close to bankruptcy (<i>Distress Zone</i>)
$1.10 < Z < 2.6$	Doubtful area means that there is a possibility of misclassifying a company as bankrupt or not.
$Z > 2.60$	The company is in a good position or not bankrupt

Research Method

This research was conducted at PT Ramayana Lestari Sentosa, Tbk by accessing www.idx.co.id. The object of this research is PT Ramayana Lestari Sentosa, Tbk which has *gone public* and made financial reports in the period 2018 -2020.

The sample used in this study is PT Ramayana Lestari Sentosa, Tbk that published their financial statements on the Indonesia Stock Exchange in the period 2018 -2020.

Types and Sources of Data

The data used in this research is Secondary Data in the form of the Annual Financial Report of PT Ramayana Lestari Sentosa, Tbk obtained via www.idx.com which includes Net working Capital, Retained earnings, Earning before Interest and Tax, Equity, Liabilities and Total Assets.

Analysis Tools Used

Financial distress analysis tool with the *Altman Z-Score method*.

$$Z = 6.56 X1 + 3.26 X2 + 6.72 X3 + 1.05 X4$$

Results and Discussion

Table 1. The result of Net Working Capital in the Period 2018 - 2020

	2018	2019	2020
X1 value	0.409	0.392	0.41
X2 Value	0.073	0.086	0.082
X3 Value	0.08	0.1	0.095
X4 Value	2.686	2.548	2.5
Z-Score Value	6.271	6.19	6.211
Company Status	(<i>Safe Zone</i>) Not Bankrupt	(<i>Safe Zone</i>) Not Bankrupt	(<i>Safe Zone</i>) Not Bankrupt

Net Working Capital in Total Assets

The following is a table made based on the net working capital account in Total assets to get the X1 value.

The value of X1 is the result of net working capital divided by the total assets contained in the financial statements of PT Ramayana Lestari Sentosa, Tbk in the period 2018 - 2020. These results indicate that the value of X1 in 2018 was 0.409 and in 2019 it decreased to 0.392 but in 2020 it increased to 0.410.

Retained Earnings on Total Assets

The following is a table made based on the net working capital account in Total assets to get the X2 value.

The value of X2 is the result of Retained Earnings divided by Total Assets contained in the Financial Statements of PT Ramayana Lestari Sentosa, Tbk in the 2018 – 2020 period. These results indicate that the value of X2 in 2018 was

0.073 and increased to 0.086 in 2019 and then decreased to 0.082 in 2020 .

Earnings Before Interest and Taxes on Total Assets

The following is a table made based on the net working capital account in Total assets to get the X3 value.

The value of X3 is the result of income before interest and tax divided by the total assets contained in the financial statements of PT Ramayana Lestari Sentosa, Tbk in the period 2018 -2020. These results indicate that the value of X3 in 2018 was 0.080 and in 2019 it increased to 0.100 but in 2020 it decreased to 0.095.

Book Value of Equity on Total Liabilities

The following is a table made based on the net working capital account in Total assets to get the X4 value.

The value of X4 is the result of Total Equity divided by Total Liabilities contained in the Financial Statements of PTRamayana Lestari Sentosa,Tbk in the period 2018 - 2020. These results indicate that the value of X4 in 2018 was 2.686 and in 2019 it decreased to 2.548 and then in 2020 it decreased to 2.500.

Z-Score Calculation Results

Analysis of the Financial Performance of PTRamayana Lestari Sentosa, Tbk using the Altman Z-Score Method to find out the Z-Score value, use the formula derived by Altman, namely:

$$Z = 6.56 X1 + 3.26 X2 + 6.72 X3 + 1.05 X4$$

Below are the Z-Score index from 2018 to 2020 at PT Ramayana Lestari Sentosa, Tbk.

The result of calculating the Z-Score at PT Ramayana Lestari Sentosa, Tbk in the 2018 period can be seen that the X1 value is 2.675 X2 is 0.238 X3 is 0.538 and X4 is 2.820 so that the Z-Score value in the 2018 period is 6.271.

The result of calculating the Z-Score at PT Ramayana Lestari Sentosa, Tbk in the 2019 period can be seen that the X1 value is 2.564, X2 is 0.280, X3 is 0.672 and X4 is 2.675, so that the Z-Score value in the 2019 period is 6.190.

The result of calculating the Z-Score at PT Ramayana Lestari Sentosa, Tbk in the 2020 period can be seen that the X1 value is 2.681, X2 is 0.267, X3 is 0.638 and X4 is 2.625, so that the Z-Score value in the 2020 period is 6.211.

A combined Z-Score result at PT Ramayana Lestari Sentosa, Tbk in the period 2018 -2020 shows that the Z-Score in 2018 was 6.271 and decreased in 2019 to 6.190. Then in 2020 it increased to 6,211. The smallest Z-Score value occurred in 2019 and then in 2020 it experienced an increase but not greater than in 2018. This shows that PT Ramayana Lestari Sentosa, Tbk has decreased but can improve it in the next period.

From the Z-Score obtained, this value when compared with Altman's *cut-off value* to see whether a company has the potential to go bankrupt can be assessed with the *cut-off value* as follows:

Z < 1.10	Possible company close to bankruptcy (<i>Distress Zone</i>)
1.10 < Z < 2.6	Doubtful area means that there is a possibility of misclassifying a company as bankrupt or not.

Z > 2.60	The company is in a good position or not bankruPT
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Despite experiencing a decrease in value in 2019 and 2020, the Z-Score obtained by PTRamayana Lestari Sentosa, Tbk is still in good condition.

In 2018 with the acquisition of a Z-Score of 6.271, it was included in *the Safe Zone* or no potential for bankruptcy. Then in 2019 the Z-Score decreased to 6,190 but was still in a healthy financial position or had no potential for bankruptcy. Then in 2020 it experienced a slight increase to 6,211 in a healthy financial position or not potentially bankrupt.

Conclusion

Based on the results and discussion using the Altman Z-Score method in chapter IV, it can be concluded that PT Ramayana Lestari Sentosa, Tbk based on the calculation of the Altman Z-Score in the period 2018-2020 produces a Z-Score index value of 6.271 in 2018 and decreased in 2019 to 6,190. Then in 2020 it increased to 6,211. PT Ramayana Lestari Sentosa, Tbk in the period 2018 - 2020 it is categorized as a financially sound company because it has a Z value > 2.60. This is because the level of profitability and level of sales at PT Ramayana Lestari Sentosa, Tbk is fairly good even though it had experienced a decline in 2019 . Then it experienced an increase again in 2020 .

References

Arif. (2015). Pengaruh Struktur Modal, Return on Equity, Likuiditas, dan Growth Opportunity Terhadap Nilai Perusahaan Jasa yang Terdaftar di Bursa Efek Indonesia. *Journal Ekonomi Universitas Negeri Yogyakarta*, 151(september 2016), 10–17.

- <https://doi.org/10.1145/3132847.3132886>
- Brimantyo, H., Topowijono, & Husaini, A. (2016). Penerapan Analisis Altman Z-Score sebagai Salah Satu Alat untuk Mengetahui Potensi Kebangkrutan Perusahaan (Pada Perusahaan Telekomunikasi yang Listing di BEI Periode Tahun 2009-2011). *Jurnal Administrasi Bisnis SI Universitas Brawijaya*, 1(1), 188–198.
<http://administrasibisnis.studentjournal.ub.ac.id/index.php/jab/article/view/26>
- Faradila, P., & Aziz, A. (2016). Analisa Kinerja Keuangan Terhadap Prediksi Financial Distress. *Jurnal Ekonomi Dan Bisnis UPNVJ*, 3(1), 27–38.
- Hertin, R. D., & Pitra, A. (2023). Pengaruh Akseibilitas dan Harga Produk terhadap Penjualan Umum di Kabupaten Lawang Melalui Platform E-Commerce. *Journal Epigram*. 20(2), 145–152.
<https://doi.org/10.32722/epi.v17i2>
- Kamal, S. I. M. (2015). Analisis Prediksi Kebangkrutan pada Perusahaan Perbankan Go Publik di Bursa Efek Indonesia. *Journal of Accounting in Emerging Economies*, 66(3), 37–39.
- Mulyati, S. N., Faridah, E., Prawiranegara, B., Kunci, K., & Keuangan, K. L. (2019). Pengaruh Sistem Pengendalian Intern Terhadap Kualitas Laporan Keuangan Universitas Galuh. *Akuntapedia*, 1(1), 60–71.
<https://jurnal.unigal.ac.id/index.php/akuntapedia/index>
- Pangkey, P. C., Saerang, I. S., & Maramis, J. B. (2018). Analisis Prediksi Kebangkrutan dengan Menggunakan Metode Altman dan Metode Zmijewski Pada Perusahaan Bangkrut yang Pernah Go Public di Bursa Efek Indonesia. *Jurnal EMBA*, 6(4), 3178–3187.
- Vania, S. (2018). Aplikasi Altman Z-

- Score Pada PT Red Planet Indonesia TBK untuk Menentukan Faktor Application Of Altman Z-Score (227).
- Wulan, W. N. N., Suharyati, S., & Rosali, R. (2019). Analisis Pembelian Tidak Terencana pada Toko Online Shopee. *Ekonomi Dan Bisnis UPNVJ*, 6(1), 54–71. <https://doi.org/10.35590/jeb.v6i1.830>