

Analysis Of Bankruptcy Prediction In Hotel, Restaurant And Tourism Sub-Sector Companies On The Indonesian Stock Exchange

Iyonna Jermina Salakay, Christin Sososutiksno, Ferry Hendro Basuki,
Dwi Hariyanti
Economics, Pattimura University.

Abstract:

Financial difficulties are a stage of decline in a company's financial condition. Companies that experience financial difficulties for a long period of time have a tendency to experience bankruptcy. There are many parties who will suffer losses if a company goes bankrupt, which is why a bankruptcy prediction model is needed that can provide early warning for companies. This research was conducted to determine whether there are differences between the Grover model and the Altman Z-Score model, the Grover model with the Springate model, and the Grover model with the Zmijewski model and to find out the most accurate bankruptcy prediction model. The research uses a paired sample test technique analysis tool with the help of the Microsoft Excel program. The conclusion of the test results of this research is that there are significant differences between the Grover model and the Altman Z-Score model, the Grover model and the Springate model, and the Grover model and the Zmijewski model and the highest level of accuracy achieved by the Grover model, followed by the Springate model, the Zmijewski model, and finally the Altman Z-score.

Keywords: *Financial Distress, Prediction Model, Financial Reports*

Date of Submission: 16-01-2025

Date of Acceptance: 26-01-2025

I. Introduction

Technological developments and changes in the economic cycle have an impact on the intense competition experienced by all business players, then companies must adapt, so that the company's survival is guaranteed. Apart from ongoing changes, bankruptcy is another challenge that a company must face. The market will respond positively by increasing the company's share price if the company's financial condition and performance are good. Before investing their funds in a company, investors and creditors will always first look at the company's financial condition. Therefore, analysis and prediction of a company's financial condition is very important, Atmini and Andayani (2005).

Next, Elmabrok, et al (2012) argue that bankruptcy or financial failure occurs when the amount of liabilities exceeds the fair value of assets or when current liabilities exceed current assets, whereas June Li, (2012), bankruptcy or financial failure experienced by most companies can have a negative impact on the world economy.

From the bankruptcy prediction model above, it was found that there are differences in the prediction results. Study Fatmawati (2012) states that the Zmijewski model is a more accurate prediction model than the Altman Z-score model and the Springate model, but Hadi and Anggraeni (2008) concluded that the Altman prediction model was the best predictor among the three predictors

which were analyzed were the Altman Z-score model, the Zmijewski model and the Springate model. Imanzadeh, et al. (2011) predict that the Springate model is more conservative than the Zmijewski model. Seeing the differences in the research results above, this research examines the differences in bankruptcy prediction between the Altman Z-score model, the Springate model and the Zmijewski model by adding the Grover model. This research was also conducted to find out the most accurate bankruptcy prediction model used to predict bankruptcy in hotel, restaurant and tourism sub-sector companies listed on the Indonesia Stock Exchange (BEI), so as to get the right model to predict bankruptcy.

II. Library Survey

Agency Theory

Jensen and Meckling (1976) explain agency theory as a form of agency relationship (agency relationship) arising from the existence of a contract established between principal which uses agent to perform services of interest principal in terms of separation of ownership and control of the company. This relationship sometimes

creates a conflict of interest between principal And agent because maybe agent don't always act according to your needs principal, thus triggering agency costs (agency cost). The aim of this separation system is to create efficiency and effectiveness by employing professional agents in managing the company.

Signaling Theory

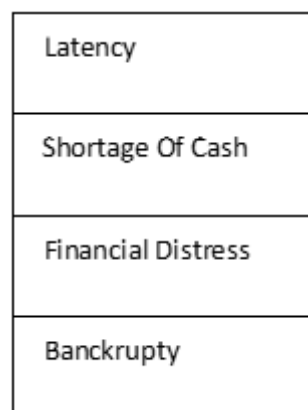
Signaling theory or signal theory, first put forward by Spence (1973), is the perspective of company shareholders regarding the company's opportunities to increase company value in the future, based on information provided by company management. This information is conveyed to provide a signal to shareholders or investors regarding company management in looking at the company's prospects in the future so that they can differentiate between good quality companies and companies that are considered bad. This information becomes an indicator for investors in making investment decisions Brigham and Houston (2014, 184).

Financial Difficulties and Bankruptcy

Financial difficulties are one of the biggest obstacles that company management needs to be aware of. Financial difficulties are a situation where the company's operating cash flow is inadequate to pay off current obligations and the company is forced to take corrective action by changing the size and operations of the company. Hapsari, (2012:103). Financial difficulties are described by Hanafi (2009:362) is between two extreme points, namely short-term liquidity difficulties to the point insolvent. Short-term financial difficulties are temporary. If these difficulties are not addressed, then financial difficulties will develop into other difficulties solvable. The company said no solvable if the company's debts are greater than the assets owned by the company. Bankruptcy is a condition when a company experiences insufficient funds to run the business. According to Peter and Joseph (2012:3) Bankruptcy in companies can be defined in two senses, namely: economic failure (economic distressed) where the company loses income and as a result is unable to cover its own costs. Financial failure (financial distressed) which means the company has difficulty funding both cash and working capital.

Financial Distress

According to Plat & Plat (2002) Financial distress is a condition of decreased financial performance experienced by a company, which often appears before bankruptcy occurs. Conditions like this usually begin with a decline in the company's performance in terms of sales and ultimately being unable to fulfill its obligations. So in the financial reports financial distress reviewed through a comparison of assets and liabilities and profit and loss statements. Financial Distress is one of the stages before a company experiences bankruptcy, according to Kordestani, et al (2011) The stages of bankruptcy are as follows:



One thing that all companies try to avoid is bankruptcy, according to the KBBI Bankruptcy is the condition of bankruptcy of a company due to its inability to pay debts. So it can be interpreted that bankruptcy is a condition that a company experiences financial distress especially in the liquidity aspect which is unable to pay its obligations.

Bankruptcy Theory

Bankruptcy is generally defined as the failure of a company to carry out company operations to generate profits. Bankruptcy is a liquidity problem that is so severe that the company is unable to carry out its operations properly. Bankruptcy as a failure that occurs in a company is defined in several ways Matin, 1995 in Ervita and Fatima (2015) namely: Economic failure (economic distressed) and financial failure (financial distressed)

Causes of Bankruptcy

Bankruptcy is a bad thing for a company's business. One of the causes of bankruptcy is poor business management (mismanagement) of the company. However, with varying internal and external conditions, there are many other things that can also cause bankruptcy in a company.

Capital Structure

One important factor in a company is capital structure, according to capital structure Brigham and Houston (2018) is a combination of several financial accounts, including debt, preferred shares and capital and capital structure can optimize the intrinsic value of a share or company. Therefore, policies in creating a capital structure and asset structure are very important. If the company is able to manage this well, the company will

be in a good financial position. On the other hand, if the company cannot manage it well or is inefficient, such as the value of debt being greater than the value of capital and assets, the company will experience financial difficulties or financial distress.

Bankruptcy Prediction Model

1. Model Grover

The Grover model is a model created by designing and re-evaluating the Altman model Z-Score. Jeffrey S. Grover uses a sample according to Altman's model Z-score in 1968, by adding thirteen new financial ratios. The sample used was 70 companies with 35 companies that went bankrupt and 35 companies that did not go bankrupt from 1982 to 1996. Jeffrey S. Grover (2001) produced the following function:

Score = $1.650X1 + 3.404X3 - 0.016ROA + 0.057$ (1) Where:

X1 = Working capital/Total assets

X3 = Earnings before interest and taxes/Total assets

LENGTH = net income/total assets

The Grover model categorizes companies as bankrupt with a score of less than or equal to -0.02 ($Z \leq -0.02$). Meanwhile, the value for companies categorized as not bankrupt is more than or equal to 0.01 ($Z \geq 0.01$).

2. Model Altman

Model Z-Score developed by Altman in 1968. In 1995 Altman modified his model so that it could be applied to all companies, such as manufacturing, non-manufacturing, and bond issuers in developing countries.

The formula for the modified Altman model is:

$$Z = 6.5X1 + 3.26X2 + 6.72X3 + 1.05X4$$

Source: Ramadhani and Niki, 2009

Information:

X1: working capital/ total asset

X2: retained earnings/ total asset

X3: earnings before interest and taxes/ total asset

X4: market value of equity/ book value of debt

The classification of healthy and bankrupt companies is based on the Z-valueScore modified Altman model, namely: if $Z < 1.1$ then the company is bankrupt. If $1.1 < Z < 2.6$, the company is in condition grey area. Meanwhile, if $Z > 2.6$ then it is a healthy company.

3. Model Springate

This model was developed by Gorgon L.V. Springate in 1978 using 40 companies as a sample. The Springate model is calculated as follows (Wulandari, et.al, 2014):

$$S = 1.03X1 + 3.07X2 + 0.66X3 + 0.4X4$$

Information:

X1: working capital/ total asset

X2: net profit before interest and taxes/ total asset

X3: net profit before taxes / current liabilities

X4: sales/ total asset

Springate presents value cut off which applies to this model is 0.862. A Z value smaller than 0.862 indicates that the company is predicted to experience bankruptcy.

4. Zmijewski model

In 1984 Zmijewski criticized the sampling methods used by his predecessors. According to him matched-pair sampling introduces bias in the results of previous research. Therefore, Zmijewski uses techniques random sampling in his research, as in Ohlson's research. In his research, Zmijewski requires one crucial thing. The proportion of the sample and population must be determined at the beginning, so that the frequency of bankruptcy

can be determined by dividing the number of samples experiencing bankruptcy by the total sample size. The model produced by Zmijewski is as follows (Peter and Yoseph, 2011):

$$X = -4,3 - 4,5X_1 + 5,7X_2 - 0,004X_3$$

Information:

X : bancruptcy index

X1: LONG (net income/ total assets)

X2: Leverage (total debt/ total assets)

X3: Liquidity (current assets/ current liabilities)

Zmijewski stated that the company was considered distress if the probability is greater than 0. 2.10. Financial Report Analysis

According to Prastowo and Julianty (2005) in Safitri and Fitantina (2016) Financial statement analysis is a process that is full of consideration in order to help evaluate the financial position and operating results of a company in the present and past with the main aim of determining the most likely estimates and predictions regarding the condition and performance of the company in the future. coming. It is hoped that the prediction results obtained through financial report analysis can be an early warning sign for companies to improve their performance in order to prevent undesirable things in the future. The results of financial report analysis will be able to help interpret various key relationships and trends that can provide a basis for considering the company's potential success in the future.

Previous Research

Several previous studies that are relevant to this topic include Melati Eka Putri, Auliffi Ermian Challen (2021) which discusses bankruptcy predictions for companies listed on the Indonesian stock exchange. This research shows that there are differences in the results of company bankruptcy predictions using the Altman Z-prediction model Score, Springate S-Score, dan Zmijewski X-Score for companies in the coal mining sector for the 2014-2018 period.

III. Results

Bankruptcy prediction analysis for hotel, restaurant and tourism sector companies listed on the Indonesia Stock Exchange (BEI) involves several methods and approaches to evaluate factors that can influence the company's survival and financial stability. In this case, bankruptcy predictions usually use statistical and financial models that examine aspects such as financial performance, liquidity, solvency, as well as external factors such as industrial and economic conditions.

The following are the general steps in bankruptcy prediction analysis for companies in this sector, as well as the results and discussion:

1. Introduction: Understanding the Industry and Context

The hotel, restaurant and tourism industry in Indonesia has characteristics that are strongly influenced by external factors such as government policy, changes in consumer trends and macroeconomic conditions. For example, the COVID-19 pandemic has greatly affected the performance of this industry, with many travel restrictions and the closure of tourist attractions. Therefore, in carrying out bankruptcy prediction analysis, it is important to consider external impacts that could disrupt the survival of companies in this sector.

2. Selection of Analysis Methods

Bankruptcy prediction models that are often used are:

Model Z-Score (Altman's Z-Score): Z-Score measures the possibility of bankruptcy based on five important financial ratios, namely:

The X1 = Working Capital / Total Assets

The X2 = Retained Earnings / Total Assets

The X3 = EBIT / Total Assets

The X4 = Market Value of Equity / Total Liabilities

The X5 = Sales / Total Assets

· Model Ohlson (O-Score): This model uses simpler variables, including financial ratios, company size, and several other indicators.

· Logit or Probit Model: Uses regression to predict the probability of bankruptcy based on a number of financial and non-financial variables.

3. Variables Used

Some variables that are often analyzed to predict bankruptcy are:

- Liquidity Ratio: Such as Current Ratio, Quick Ratio, to assess the company's ability to meet short-term obligations.
- Profitability Ratio: Such as Return on Assets (ROA), Return on Equity (ROE), to assess the company's ability to generate profits from the assets it owns.
- Solvency Ratio: Such as the Debt to Equity Ratio (DER), to assess the company's dependence on debt.
- Revenue and Profit Trends: Observe whether the company experiences a significant decline in revenue or profits.

4. Analysis Results

Bankruptcy analysis of hotel, restaurant and tourism sector companies on the IDX will usually produce the following results:

- Companies with a High Z-Score (Not at Risk of Bankruptcy): Companies with a high Z-Score (> 2.99) are usually considered safe from bankruptcy, although industry or economic conditions may have a limited impact.

They usually have strong financial ratios and adequate liquidity.

- Companies with Medium Z-Score (Moderate Risk): Companies with scores between 1.81 and 2.99 tend to be in the moderate risk category. Although they can survive in the short term, significant changes in industry conditions can worsen their financial situation.
- Companies with Low Z-Score (High Risk): Companies with a Z-Score below 1.81 are considered high risk. If there are no changes in management or significant financial improvements, they may face bankruptcy in the near future.

These companies often have poor liquidity and solvency ratios, and have difficulty generating profits.

5. Factors Causing Bankruptcy

Some factors that influence the possibility of bankruptcy in this sector are:

- Income Shrinkage: A decline in revenue due to external factors (such as a pandemic, natural disaster, or change in tourism trends) can cause severe liquidity difficulties.
- High Debt: Many companies in this sector depend on debt for expansion and operations, which, if not managed well, could be at risk of bankruptcy.
- High Fixed Costs: The hotel and restaurant sector generally has high fixed costs (rent, operations), which can burden companies when revenues decline.
- Dependence on Seasonality and Foreign Tourists: Many companies in this sector rely heavily on seasonal tourism and foreign tourists. A decrease in tourist numbers or travel restrictions could significantly reduce demand.

From the results of the analysis carried out, it can be concluded that the hotel, restaurant and tourism sectors in Indonesia face major challenges in maintaining company survival. Some companies may have relatively stable scores, but many are high risk, especially those that have high debt or are unable to adapt to changing market trends.

These companies need to take strategic steps to increase their liquidity and profitability, such as:

- Diversify services or products to reduce dependence on one type of income.
- Manage debt carefully to avoid excessive financial burden.
- Adapt operations to the latest tourism trends, such as the development of domestic or experience-based tourism.

Apart from that, external factors such as government policies regarding tourism, incentives for the hotel industry, and global economic recovery also play an important role in determining the future of this sector in Indonesia.

IV. Conclusion

In a sector that is highly influenced by external factors such as tourism, economic movements and socio-political conditions, analysis of bankruptcy predictions for hotel, restaurant and tourism sector companies on the Indonesian Stock Exchange shows that many companies face the risk of bankruptcy, especially those with high debt and performance. bad finances. To mitigate these risks, these companies need to focus on improving their financial ratios, diversifying income, and being responsive to changing market conditions.

Reference

- [1] Atmini, S. And Wuryan, A. 2005. Benefits Of Profit And Cash Flow For Predicting Financial Distress Conditions In Textile Mill Products And Apparel And Other Textile Products Companies Listed On The Jakarta Stock Exchange. SNA VIII: Pp. 460– 474.
- [2] Elmabrok, Ali Abusalah., Mohammed And Ng Kim-Soon. 2012. Using Altman's Model And Current Ratio To Assess The Financial Status Of Companies Quoted In The Malaysian Stock Exchange. International Journal Of Scientific And Research Publications, 2(7). Faculty Of Technology Management, Business And Entrepreneurship, Universiti Tun Hussein Onn Malaysia.
- [3] June Li. 2012. Prediction Of Corporate Bankruptcy From 2008 Through 2011. Journal Of Accounting And Finance 12(1). University Of Wisconsin, River Falls.

- [4] Almilia, Luciana Spica And Winny Herdiningtyas. 2005. Analysis Of The CAMEL Ratio On Predicting Problematic Conditions In Banking Institutions For The Period 2000 – 2002. *Journal Of Accounting And Finance*, 7(2). STIE PERBANAS Surabaya.
- [5] Ghosh, Partha. 2013. Testing Of Altman's Z - Score Model, A Case Study Of Dunlop India Ltd. *Paripex-Indian Journal Of Research* 3(4). Faculty, Department Of Business Administration, George College Of Management And Science, Kolkata.
- [6] Gamayuni, Missing Rika. 2011. Analysis Of The Accuracy Of The Altman Model As A Tool For Predicting Bankruptcy (Empirical Study Of Manufacturing Companies On The IDX). *Journal Of Accounting And Finance* 16(2). Faculty Of Economics, University Of Lampung.
- [7] Adriana, Azwir Nasir, And Rusli. 2012. Bankruptcy Prediction Analysis Using The Springate Method In Foods And Beverages Companies Listed On The Indonesian Stock Exchange For The 2006-2010 Period. *Repository Journal*. Riau University Faculty Of Economics.
- [8] Endri. 2009. Bank Bankruptcy Prediction To Face And Manage Changes In The Business Environment: Altman's Z-Score Model Analysis. *Perbanas Quarterly Review*, 2(1).
- [9] Pradhan, Roll. 2011. Prediction Of Z Score For Private Sector Banking Firms. *International Referred Research Journal*. 2(22). ISSN-0975-3486, RNI: RAJBIL 2009/30097.
- [10] Nidhi, Arora And Jatinderkumar R. Saini. 2013. Time Series Model For Bankruptcy Prediction Via Adaptive Neuro-Fuzzy Inference System. *International Journal Of Hybrid Information Technology*. 6(2). India.
- [11] Fatmawati, Mila. 2012. Usage The Zmijewski Model, The Altman Model, Dan The Springate Model As A Delisting Predictor. *Journal Of Finance And Banking* 16(1), P: 56-65. Faculty Of Economics, Muhammadiyah Metro University.
- [12] Hadi, Syamsul And Atika Anggraeni. 2008. Selection Of The Best Delisting Predictors (Comparison Between The Zmijewski Model, The Altman Model, Dan The Springate Model). Faculty Of Economics, Islamic University Of Indonesia.
- [13] Imanzadeh, Peyman., Jouri-Mehdi Maran And Petro Sepehri. 2011. A Study Of The Application Of Springate And Zmijewski Bankruptcy Prediction Models In Firms Accepted In Tehran Stock Exchange. *Australian Journal Of Basic And Applied Sciences*, 5(11): 1546-1550 . Islamic Azad University, Iran.