



## ANALYSIS OF FINANCIAL DISTRESS USING THE ZMIJEWSKI (X-SCORE) METHOD

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### Abstract

*The purpose of this study was to analyze the financial distress of plantation sub-sector companies using the Zmijewski method (X-Score) and to determine the level of accuracy and type of error of the three methods. The population in this study are 19 companies. Then, the samples in this study were obtained using a purposive sampling technique of 44 samples from 11 plantation sub-sector companies listed on the Indonesia Stock Exchange in 2018-2021. The data source used in this study uses secondary data in the form of company financial reports from the official website of the Indonesia Stock Exchange and the websites of each company. The analysis technique used is a quantitative descriptive analysis technique using financial ratios from the Zmijewski method. The results of this study indicate that the Zmijewski method has an accuracy rate of 36%. Two companies experiencing financial distress PT. Jaya Agra Wattie Tbk and PT. Eagle High Plantations Tbk.*

**Keywords:** *Zmijewski, financial distress, plantation sector*

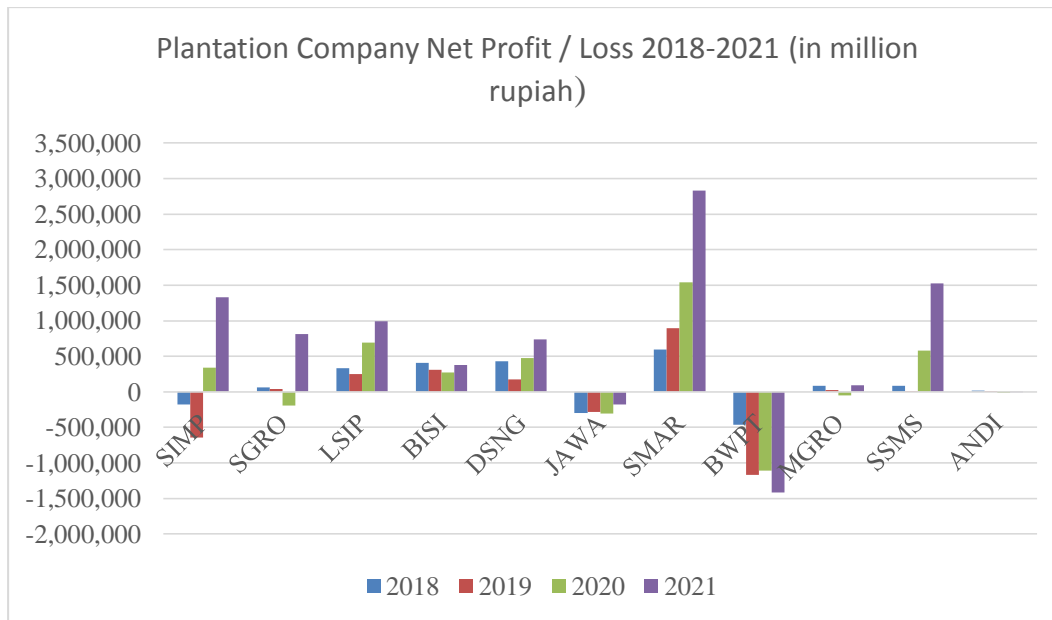
### Introduction

In general, every business is run with the aim of maximizing profits. In doing business, it is necessary to serve the community by launching social programs for the community, such as providing job vacancies. In the activity of a business not only maximizing profits and community service, maintaining business continuity in order to survive so as to avoid financial difficulties or financial distress.

Financial distress is a condition where the company is less or no longer able to pay its short term obligations. In general, financial distress occurs due to problems caused by internal and external parties to the company. Internal problems often occur because management is not careful in making a decision, so that later there will be many financial problems that arise (Prasetianingias & Kusumowati, 2019)

According to Hani (2015) in Wahyuni & Rubiyah (2021), financial distress is characterized by declining financial ratios, declining assets, declining profits, and profitability levels. If this is not done immediately, it will end in bankruptcy.

Since the occurrence of the COVID pandemic in 2019, it has had a real impact on all aspects of the national and even world economy. There was an economic downturn due to large-scale social restrictions (PSBB) and the emergence of layoffs (PHK) because companies were unable to provide the salary they should have, even to the point where companies were toppled or went bankrupt.



Based on the financial reports that have been published on the Indonesia Stock Exchange, the plantation sub-sector in 2018 to 2021 has experienced increases and decreases and some have even experienced losses. This was due to the Covid-19 outbreak where several companies experienced a decrease in revenue and even experienced sizable losses. For example, PT. Sampoerna Agro Tbk (SGRO) and PT. Mahkota Group Tbk (MGRO) which experienced losses in 2020. PT. Andira Agro Tbk (MGRO) which experienced losses in 2020 and 2021. Then, PT Jaya Agra Wattie Tbk (JAWA) and PT Eagle High Plantations Tbk (BWPT) which experienced losses from 2018 to 2021 continuously. Then, there is PT. Salim Ivomas Pratama Tbk (SIMP) which experienced losses from 2018-2019. With the occurrence of several declines to losses in some of these companies which can cause financial distress to the company.

Previous research related to the title of the author's research was carried out by (Rachmawati et al., 2022) with the title "An Analysis of Financial Distress in Automotive Companies Listed on the Indonesia Stock Exchange" it can be concluded that: The results show that automotive companies experience financial distress for each model used. The highest level of accuracy shows that the Zmijewski model correctly predicts financial distress in automotive companies based on all samples used.

Based on the background described above, the researcher is interested in conducting research on plant sub-sector companies listed on the Indonesia Stock Exchange with the same

method entitled "Financial Distress Analysis Using the Zmijewski Method". (Case Study of Plantation Sub-Sector Companies Listed on the Indonesia Stock Exchange for the 2018-2021 period).

### **Research Purposes**

To find out using the Zmijewski method in predicting financial distress in plantation subsector companies di PT. Salim Ivomas Pratama Tbk., PT. Sampoerna Agro Tbk., PT. Perusahaan Perkebunan London Sumatra, PT Bisi International Tbk., PT. Dharma Satya Nusantara Tbk., PT. Jaya Agra Wattie Tbk., PT. Sinar Mas Agro Resources and Technology Tbk., PT. Eagle High Plantations Tbk., PT. Mahkota Group Tbk., PT. Sawit Sumbermas Sarana Tbk, PT. Andira Agro Tbk., tercatat di Bursa Efek Indonesia periode 2018–2021.

### **Research Methods**

Source of data used in this research is secondary data that can be obtained through each company to be studied. This data was obtained from financial reports published on the Indonesia Stock Exchange for the 2018–2021 period. As well as materials available in their respective books, journal articles, or company websites.

The population used in this study is the plantation sub-sector companies listed on the Indonesia Stock Exchange totaling 19 companies. Sampling was carried out using purposive sampling technique.

Data analysis used in this study is descriptive quantitative data expressed in the form of numbers and problem solving based on facts that can be concluded in the form of words. This study uses secondary data in the form of financial statements of each company, literature coverage, and several other journals.

This study uses the Zmijewski (X-Score) method to analyze financial distress in plantation companies. The following formula is used:

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

Where:

$X_1$  = Profit After Tax / Total Assets

$X_2$  = Total Debt / Total Assets

$X_3$  = Current Assets / Short Term Debt

Criteria:

If the score is more than 0 (zero), then the company is predicted to be in non-financial distress (Safe), but if the score obtained is less than 0, (Bankrupt).

Sari (2014) dalam (Nirmalasari, 2018)

## **Result**

### **Research Finding**

In this study, it was determined that the research subjects were plantation sub-sector companies listed on the Indonesia Stock Exchange for the 2018–2021 period. There are 11 companies that are the research subjects of PT. Salim Ivomas Pratama Tbk., PT. Sampoerna Agro Tbk., PT. Perusahaan Perkebunan London Sumatra., PT. Bisi International Tbk., PT.

Dharma Satya Nusantara Tbk., PT. Jaya Agra Wattie Tbk., PT. Sinar Mas Agro Resources And Teknology Tbk., PT. Eagle High Plantations Tbk., PT. Mahkota Group Tbk., PT. Sawit Sumbermas Sarana Tbk., PT. Andira Agro Tbk.

| No | Company Name   | Period | X <sub>1</sub> | X <sub>2</sub> | X <sub>3</sub> | X       | Condition |
|----|--|--------|----------------|----------------|----------------|---------|-----------|
| 1  | PT. Salim Ivomas<br>Pratama Tbk                      | 2018   | -0,0051        | 0,4725         | 0,897          | -1,5872 | Safe      |
|    |  | 2019   | -0,0184        | 0,49066        | 0,76744        | -1,4235 | Safe      |
|    |  | 2020   | 0,00961        | 0,47762        | 0,88437        | -1,6244 | Safe      |
|    |  | 2021   | 0,03707        | 0,45007        | 1,0401         | -1,9056 | Safe      |
| 2  | PT. Sampoerna Agro<br>Tbk                            | 2018   | 0,00705        | 0,55329        | 0,91855        | -1,1817 | Safe      |
|    |  | 2019   | 0,00422        | 0,56135        | 0,58133        | -1,1217 | Safe      |
|    |  | 2020   | -0,0197        | 0,61045        | 0,73008        | -0,7348 | Safe      |
|    |  | 2021   | 0,08355        | 0,52861        | 1,09205        | -1,6673 | Safe      |
| 3  | PT. Perusahaan<br>Perkebunan London<br>Sumatra       | 2018   | 0,03282        | 0,16988        | 4,65694        | -3,498  | Safe      |
|    |  | 2019   | 0,02471        | 0,16888        | 4,6968         | -3,4674 | Safe      |
|    |  | 2020   | 0,06367        | 0,14982        | 4,89154        | -3,7521 | Safe      |
|    |  | 2021   | 0,08357        | 0,14165        | 6,18439        | -3,8934 | Safe      |
| 4  | PT. Bisi International<br>Tbk                        | 2018   | 0,14606        | 0,16459        | 5,48343        | -4,0411 | Safe      |
|    |  | 2019   | 0,10437        | 0,21233        | 4,13958        | -3,5759 | Safe      |
|    |  | 2020   | 0,09457        | 0,15664        | 5,8274         | -3,856  | Safe      |
|    |  | 2021   | 0,12164        | 0,12903        | 7,1331         | -4,1404 | Safe      |
| 5  | PT. Dharma Satya<br>Nusantara Tbk                    | 2018   | 0,03684        | 0,6883         | 1,03313        | -0,5466 | Safe      |
|    |  | 2019   | 0,01533        | 0,67889        | 0,81827        | -0,5026 | Safe      |
|    |  | 2020   | 0,03379        | 0,55971        | 1,1396         | -1,2663 | Safe      |
|    |  | 2021   | 0,05394        | 0,48765        | 1,25077        | -1,7681 | Safe      |
| 6  | PT. Jaya Agra Wattie<br>Tbk                          | 2018   | -0,0872        | 0,80422        | 0,51581        | 0,67435 | Bangkrup  |
|    |  | 2019   | -0,081         | 0,88821        | 0,39453        | 1,12576 | Bangkrup  |
|    |  | 2020   | -0,0881        | 0,93015        | 0,26902        | 1,39705 | Bangkrup  |
|    |  | 2021   | -0,05          | 0,93736        | 0,38244        | 1,26635 | Bangkrup  |
| 7  | PT. Sinar Mas Agro<br>Resources And<br>Teknology Tbk | 2018   | 0,02039        | 0,58209        | 1,49101        | -1,0799 | Safe      |
|    |  | 2019   | 0,03234        | 0,60655        | 1,07511        | -0,9925 | Safe      |
|    |  | 2020   | 0,04396        | 0,64245        | 1,29621        | -0,8411 | Safe      |
|    |  | 2021   | 0,07013        | 0,64264        | 1,45487        | -0,9584 | Safe      |
| 8  | PT. Eagle High<br>Plantations Tbk                    | 2018   | -0,0286        | 0,64124        | 0,59215        | -0,5185 | Safe      |
|    |  | 2019   | -0,0739        | 0,70796        | 0,65737        | 0,06531 | Bangkrup  |
|    |  | 2020   | -0,0736        | 0,76843        | 0,92083        | 0,40754 | Bangkrup  |
|    |  | 2021   | -0,1177        | 0,82916        | 0,62071        | 0,9532  | Bangkrup  |
| 9  | PT. Mahkota Group<br>Tbk                             | 2018   | 0,07807        | 0,38244        | 1,44           | -2,4772 | Safe      |
|    |  | 2019   | 0,01883        | 0,48426        | 1,11995        | -1,6289 | Safe      |
|    |  | 2020   | -0,0346        | 0,56525        | 0,72828        | -0,9254 | Safe      |
|    |  | 2021   | 0,04933        | 0,61004        | 1,02778        | -1,0488 | Safe      |

| No | Company Name                         | Period | X <sub>1</sub> | X <sub>2</sub> | X <sub>3</sub> | X       | Condition |
|----|--------------------------------------|--------|----------------|----------------|----------------|---------|-----------|
| 10 | PT. Sawit<br>Sumbermas Sarana<br>Tbk | 2018   | 0,00768        | 0,63977        | 5,27699        | -0,709  | Safe      |
|    |                                      | 2019   | 0,00102        | 0,65652        | 2,51088        | -0,5725 | Safe      |
|    |                                      | 2020   | 0,04546        | 0,61875        | 2,37417        | -0,9872 | Safe      |
|    |                                      | 2021   | 0,11024        | 0,55904        | 2,39119        | -1,6191 | Safe      |
| 11 | PT. Andira Agro Tbk                  | 2018   | 0,03186        | 0,54406        | 0,73901        | -1,3452 | Safe      |
|    |                                      | 2019   | 0,02563        | 0,46819        | 1,36085        | -1,7521 | Safe      |
|    |                                      | 2020   | -0,0212        | 0,4769         | 0,89357        | -1,4898 | Safe      |
|    |                                      | 2021   | -0,0065        | 0,48358        | 1,39939        | -1,5201 | Safe      |

Based on the results of this research analysis, there have been nine companies that have not experienced financial difficulties or non-financial distress in the 2018-2021 period, namely PT. Salim Ivomas Pratama Tbk, PT. Sampoerna Agro Tbk, PT. London Sumatra Plantation Company, PT. Bisi International Tbk, PT. Dharma Satya Nusantara Tbk, PT. Sinar Mas Agro Resources and Technology Tbk, PT. Mahkota Group Tbk, PT. Sawit Sumbermas Sarana Tbk, and PT. Andira Agro Tbk. then there was one company in 2018 namely PT. Eagle High Plantations Tbk. and the results of the analysis that experienced financial distress, there was one company in 2018 namely PT. Jaya Agra Wattie Tbk. then in the 2019-2021 period there were two companies namely PT. Jaya Agra Wattie Tbk and PT. Eagle Plantations Tbk.

## Conclusions and Recommendations

### Conclusion

Based on the results of the discussion described above, the researcher can conclude that the financial distress analysis for the plantation sector for the 2018-2021 period using the Zmijewski method has two companies experiencing financial distress including PT. Jaya Agra Wattie Tbk and PT. Eagle Plantations Tbk with an average accuracy rate of 36% with error types I and II of 64%.

### Recommendations

It is expected to add other methods to analyze financial distress. For example, Altman Z-Score, Springate, Grover and others.

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