

## Financial Distress Prediction Analysis Using The Springate (S-Score) Method: A Case Study Of PT Waskita Tbk

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### Abstract

*This study aims to analyze financial distress prediction using the Springate (S-Score) method at PT Waskita Karya (Persero) Tbk. The research employed a descriptive quantitative approach. The data used in this study were secondary data in the form of financial statements of PT Waskita Karya (Persero) Tbk for the period 2014–2024, obtained from the official website of the Indonesia Stock Exchange. Data collection techniques included documentation and literature study. The data analysis techniques used were the Springate (S-Score) method and the One Sample t-test. The results showed that PT Waskita Karya (Persero) Tbk was in a condition of financial distress based on the Springate (S-Score) method. The results of the One Sample t-test indicated that the average Springate (S-Score) value of the company was below the established cut-off value, indicating that the company was experiencing financial distress. Therefore, it can be concluded that PT Waskita Karya (Persero) Tbk had the potential to experience financial difficulties and bankruptcy risk during the research period.*

**Keywords:** Financial Distress, Springate (S-Score), Bankruptcy

### INTRODUCTION

Economic growth is one of the indicators that reflects the financial and economic conditions experienced by a country. Economic growth is a process of changing a country's condition continuously toward a better condition over a certain period (Marcal et al., 2024). Economic growth in Indonesia has shown an increase in recent years. This is indicated by various government efforts in encouraging national development, one of

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which is through infrastructure development to support economic sustainability. The construction sector plays an important role in supporting Indonesia's economic growth through infrastructure development (Arga et al., 2022).

The construction and building sector is an indicator in assessing the economic development of a country because it is one of the alternatives favored by investors for investment. In the current business world development, many companies experience intense market competition (Munandar et al., 2021). This condition causes companies to face increasing project costs, delays in development implementation, and high corporate debt burdens. The impact of these conditions can affect the company's financial performance, such as declining profits and the company's ability to fulfill its financial obligations. If a company does not continuously pay attention to its financial performance, it will experience financial distress which will eventually lead to bankruptcy (Hartanto Rhesa Ricardo, 2018). Bankruptcy can be predicted several years beforehand, and this prediction can be measured using various methods, one of which is the Springate S-Score Method.

According to Fitriani (2020), the Springate S-Score method is a corporate bankruptcy prediction method that uses a combination of several financial ratios with different weights. The Springate method is also known as one of the methods for analyzing a company's potential bankruptcy through the company's financial condition, so that it can be used as a tool for interested parties in evaluating the company's condition and performance (Ben & Ar, 2015). The Springate method uses 4 ratios out of 19 financial ratios to distinguish companies that are bankrupt from those that are not bankrupt (Anitra & Widyawati, 2018).

Working Capital to Total Asset Ratio is one of the Springate ratios that shows the ratio between working capital (namely current assets minus current liabilities) and total assets. A higher Working Capital to Total Asset value indicates greater working capital obtained by the company compared to its total assets (Nurlaila et al., 2021). Meanwhile, the Net Profit Before Interest and Taxes Ratio is used to measure the company's ability to generate profit. The rate of return on assets is calculated by dividing earnings before interest and taxes (EBIT) by total assets in the company's balance sheet (Peter and Yoseph, 2011).

Furthermore, the Net Profit Before Taxes to Current Liabilities Ratio is used to measure the company's ability to pay its short-term debts. It is calculated by measuring the comparison between earnings before tax and interest and current liabilities. The Earnings Before Tax to Current Liabilities ratio enables company management to



determine how much profit after deducting interest expenses can cover existing current liabilities (Peter and Yoseph, 2011). The Sales to Total Asset Ratio shows the level of efficiency in the use of the company's total assets in generating sales volume. This ratio measures how efficiently those assets have been utilized to generate income. The higher the total sales to total assets ratio, the more efficient the use of the company's total assets in generating sales volume (Peter and Yoseph, 2011).

PT Waskita Karya (Persero) Tbk is a leading state-owned construction company in Indonesia established on January 1, 1961. PT Waskita Karya (Persero) Tbk with the stock code WSKT listed its shares for the first time (Listing/IPO) on the Indonesia Stock Exchange (IDX) on December 19, 2012. Waskita became the 18th state-owned enterprise listed on the IDX. Based on the financial statements, PT Waskita Karya (Persero) Tbk with the stock code WSKT has indeed experienced severe financial pressure over the last 10 years (approximately 2014 until 2024), especially marked by substantial consecutive losses in recent years. The financial data of PT Waskita Karya (Persero) Tbk can be seen in the table below:

| Year | Current Assets | Current Liabilities | Total Assets | EBIT     | EBT      | Sales     |
|------|----------------|---------------------|--------------|----------|----------|-----------|
| 2014 | 10.104,98      | 7.728,15            | 12.542,04    | 939,383  | 755,601  | 10.286,81 |
| 2015 | 15.805,62      | 13.664,81           | 30.309,11    | 1.446,99 | 1.117,08 | 14.152,75 |
| 2016 | 36.882,46      | 31.461,56           | 61.425,18    | 3.145,78 | 2.155,58 | 23.788,32 |
| 2017 | 52.427,02      | 52.309,19           | 97.895,76    | 6.526,60 | 4.620,64 | 45.212,89 |
| 2018 | 66.989,13      | 56.799,73           | 124.391,58   | 7.966,90 | 5.536,44 | 48.788,95 |
| 2019 | 49.037,84      | 45.023,50           | 122.589,26   | 5.239,47 | 1.328,64 | 31.387,39 |
| 2020 | 28.755,28      | 48.564,87           | 100.767,65   | 4.339,35 | 9.729,42 | 16.190,45 |
| 2021 | 42.588,61      | 27.201,57           | 103.601,61   | 4.075,56 | 1.086,24 | 12.224,12 |
| 2022 | 25.430,24      | 21.131,67           | 98.232,32    | 1.968,37 | 1.240,77 | 15.302,87 |
| 2023 | 21.723,13      | 22.907,15           | 95.595,90    | 924,569  | 3.775,58 | 10.954,69 |
| 2024 | 20.437,54      | 22.498,27           | 77.159,74    | 268,031  | 3.864,46 | 10.705,15 |

**Table 1. Financial Statement Data of PT Waskita Karya Tbk**

(Presented in Indonesian Rupiah, unless otherwise stated)

Source: PT Waskita Karya (Persero) Tbk Financial Statements for the Period 2014–2024.

Based on Table 1, the Working Capital to Total Asset ratio represented by PT Waskita Karya's current assets and current liabilities from 2014 to 2024 experienced fluctuations. The period from 2014 to 2018 showed an increase due to the addition of new



projects that encouraged the growth of current assets. However, from 2019 to 2020, it decreased as a result of project payment delays and the impact of the COVID-19 pandemic, which put pressure on construction activities. In 2021, it increased again along with the recovery of construction projects and the increase in cash and trade receivables. However, from 2022 to 2024, it gradually declined again due to liquidity pressures, debt restructuring, and decreases in the company's cash, receivables, and gross billings. Meanwhile, current liabilities increased until 2018 due to working capital requirements and infrastructure project financing. In 2019, current liabilities decreased, then increased again in 2020 due to funding needs during the pandemic. From 2021 to 2024, current liabilities declined again as a result of debt restructuring and the reduction of short-term borrowings.

Based on Table 1, the Net Profit Before Interest and Taxes ratio represented by EBIT and total assets of PT Waskita Karya from 2014 to 2024 experienced fluctuations. Total assets increased until 2018 due to the expansion of infrastructure projects and toll road construction, but declined from 2019 to 2020 due to the slowdown in construction projects and the impact of the COVID-19 pandemic. In 2021, total assets increased again along with the recovery of the company's operations, but declined again from 2022 to 2024 due to restructuring and the reduction of company assets. Meanwhile, EBIT increased until 2018 due to high revenues from construction projects. However, during the period from 2019 to 2024, EBIT continued to decline due to decreasing revenues, increasing operating expenses, the slowdown of the construction sector, and the impact of the COVID-19 pandemic, which hampered the company's project activities.

Based on Table 1, the Net Profit Before Taxes to Current Liabilities ratio represented by EBT (Earnings Before Tax) of PT Waskita Karya from 2014 to 2024 experienced fluctuations. Earnings Before Tax increased until 2018 due to rising revenues and operating profits from infrastructure projects. However, in 2019, EBT declined due to weakening operating performance and increasing company expenses. In 2020, EBT increased significantly, which was presumably influenced by certain revenue increases or non-operating gains. Nevertheless, during the period from 2021 to 2022, EBT declined again due to the impact of the COVID-19 pandemic, high interest expenses on debt, and the company's reduced ability to generate profits. In 2023 and 2024, EBT increased again along with improvements in performance, revenue, and the company's financial condition.

Based on Table 1, the Sales to Total Asset ratio represented by PT Waskita Karya's sales from 2014 to 2024 experienced fluctuations. Sales increased until 2018 due



to the high number of infrastructure development and construction projects, which encouraged the growth of the company's revenue. However, during the period from 2019 to 2021, sales declined due to the slowdown in construction projects, reduced operational activities, and the impact of the COVID-19 pandemic. In 2022, sales increased again along with the recovery of economic activities and the company's construction projects. Nevertheless, during the period from 2023 to 2024, sales declined again, indicating a reduction in project activities and the company's construction revenues.

## **LITERATURE REVIEW**

### **THEORETICAL REVIEW**

#### **Financial Statement Analysis**

According to Kasmir (2016), financial statements are reports that show the financial condition or state of a company during a certain period. Meanwhile, according to Harahap (2015), financial statements describe the financial condition and business results of a company at a certain time or during a certain period. Financial statements are financial data prepared regarding a company's finances, consisting of the income statement, statement of changes in equity, and balance sheet, which are presented at the end of an accounting period. Through these financial statements, the condition and performance of the company can be identified and analyzed. According to Hanafi and Halim (2007), financial ratio analysis is categorized into five types, namely liquidity ratios, activity ratios, solvency ratios, profitability ratios, and market ratios.

#### **Bankruptcy Analysis Using The Springate (S-Score) Method**

According to Karina (2014), "Bankruptcy analysis is a condition in which a company is no longer able to fulfill its obligations." This condition usually does not occur suddenly within a company; rather, there are early indications that can generally be identified if the financial statements are analyzed more carefully using certain methods. Therefore, financial statement analysis is important for detecting the possibility of financial difficulties or financial distress that may lead to bankruptcy (Mulya & Jasman, 2023). In practice, various bankruptcy analysis methods or techniques have been used, one of which is the Springate (S-Score) Method.

According to Peter and Yoseph (2011), the Springate Method is a corporate bankruptcy prediction method developed by Gordon L. V. Springate in 1978 using several financial ratios to predict the potential financial distress of a company. In its development, Springate used four financial ratios that were considered capable of distinguishing

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between companies experiencing bankruptcy and those not experiencing bankruptcy (Ghodrati, 2012). The Springate Method has a bankruptcy prediction accuracy rate of 92.5%. The Springate S-Score formula is as follows:

$$S = 1.03X_1 + 3.07X_2 + 0.66X_3 + 0.4X_4$$

Description:

$X_1$  = Working Capital / Total Assets

$X_2$  = Earnings Before Interest and Taxes / Total Assets

$X_3$  = Earnings Before Taxes / Current Liabilities

$X_4$  = Sales / Total Assets

### 1. Working Capital to Total Assets Ratio ( $X_1$ )

This ratio shows the proportion of working capital (namely current assets minus current liabilities) to total assets. A higher Working Capital to Total Assets ratio indicates that the company has a greater amount of working capital compared to its total assets (Peter and Yoseph, 2011).

$$X_1 = \frac{\text{Current assets} - \text{Current Liabilities}}{\text{total assets}}$$

Source : Yunita, (2018)

### 2. Earnings Before Interest and Taxes Ratio ( $X_2$ )

This ratio is used to measure the company's ability to generate profit. The rate of return on assets is calculated by dividing Earnings Before Interest and Taxes (EBIT) by total assets in the company's balance sheet (Peter and Yoseph, 2011).

$$X_2 = \frac{EBIT}{\text{Total Assets}}$$

Source : Yunita, (2018)

### 3. Earnings Before Taxes to Current Liabilities Ratio ( $X_3$ )

This ratio is used to measure the company's ability to pay its short-term debts. The calculation is performed by measuring the comparison between earnings before taxes and interest and current liabilities. The EBT to Current Liabilities ratio enables company management to determine how much profit, after being reduced by interest expenses, can cover the existing current liabilities (Peter and Yoseph, 2011).

$$X_3 = \frac{\text{Earnings Before Taxes}}{\text{Current Liabilities.}}$$

Source : Yunita, (2018)



**4. Sales to Total Assets Ratio (X4)**

This ratio shows the level of efficiency in the use of the company's total assets in generating sales volume. This ratio measures how efficiently those assets have been utilized to generate income. The higher the total sales to total assets ratio, the more efficient the use of the company's total assets in generating sales volume (Peter and Yoseph, 2011).

$$X_4 = \frac{\text{Sales}}{\text{total Assets}}$$

Source : Yunita, (2018)

The assessment criteria of the Springate Method are as follows:

**Table 2 Springate Method Assessment Criteria**

| S           | Condition                |
|-------------|--------------------------|
| $S > 0.862$ | Not Potentially Bankrupt |
| $S = 0.862$ | Grey Area                |
| $S < 0.862$ | Potentially Bankrupt     |

Source : Peter dan Yoseph, (2011)

Description:

a) S-Score  $> 0.862$ , then the company is classified as not experiencing Financial Distress.

b)  $S = 0.862$ , then the company is classified as being in a vulnerable condition (grey area). In this condition, the company experiences financial problems that must be handled appropriately.

c) S-Score  $< 0.862$ , then the company is classified as experiencing Financial Distress (Peter and Yoseph, 2011).

**RESEARCH HYPOTHESIS**

$H_0: \mu \leq 0.862$  : The Springate (S-Score) of PT Waskita Karya Tbk is less than or equal to 0.862 than expected (the company is categorized as being in a Financial Distress condition and is potentially experiencing bankruptcy).



$H_a: \mu > 0.862$  : The Springate (S-Score) of PT Waskita Karya Tbk is greater than 0.862 than expected (the company is categorized as not being in a Financial Distress condition and bankruptcy).

## **RESEARCH METHODOLOGY**

### **Research Type**

The type of research used in this study is descriptive research with the aim of determining the condition of companies experiencing Financial Distress and non-Financial Distress.

### **Research Instrument**

The research instrument used in this study is secondary data obtained from the company's financial statements, which include the statement of financial position (Balance Sheet) and income statement. These data are used as the basis for calculating the financial ratios contained in the Springate (S-Score) Method, namely the ratio of working capital to total assets, the ratio of earnings before interest and taxes (EBIT) to total assets, the ratio of earnings before taxes to current liabilities, and the ratio of sales to total assets. This instrument is used to analyze and predict the Financial Distress condition of the company that is the object of the study.

### **Population And Research Sample**

Population and sample are two components that originate from the basic foundation of understanding in a study that has been conducted. Population is defined as all objects or subjects, events, or other occurrences that have specific characteristics that become the target of a study (Sugiyono, 2021).

A sample is defined as a part of the population whose elements are selected using certain procedures to be utilized as a source of primary data, and the results of the data are then used to generalize the entire population (Arikunto, 2019).

The sampling technique used in this study was purposive sampling. The sample selection criteria in this study are as follows:

1. Construction companies listed on the Indonesia Stock Exchange during the period 2012 to 2024.
2. Companies that publish their financial statement data and have been listed on the Indonesia Stock Exchange during the period 2014 to 2024.



## RESEARCH LOCATION

This study uses secondary data obtained from the financial statements of PT Waskita Karya (Persero) Tbk listed on the Indonesia Stock Exchange. The research data were accessed through the official website of the Indonesia Stock Exchange, namely [www.idx.co.id](http://www.idx.co.id). The process of data collection and processing was carried out in November 2025.

PT Waskita Karya (Persero) Tbk is a company engaged in construction services and is included in the category of State-Owned Enterprises (SOEs). The company's head office is located at Waskita Heritage Building, Jl. MT Haryono Kav. No. 10, Cawang, Jatinegara District, East Jakarta, Special Capital Region of Jakarta 13340.

## Data Collection Techniques

Data collection techniques are methods used by researchers to obtain the data needed in a study (Sugiyono, 2019). The data collection techniques in this study are:

### 1. Documentation

According to Sugiyono (2019), documentation is a record of past events presented in the form of writings, pictures, or monumental works of a person. In this study, the data collected were financial statements of construction subsector companies listed on the Indonesia Stock Exchange (IDX).

### 2. Literature Study

According to Sugiyono (2019), a literature study is a data collection technique conducted by collecting data from research reports, scientific books, articles, and journals related to the study. In this study, the literature sources used were journals of previous researchers obtained through available sites or websites.

## Data Analysis Techniques

1. The descriptive analysis used in this study is quantitative analysis using the Springate (S-Score) method. Descriptive analysis is conducted by describing the results of the Springate S-Score calculation based on the standard value. A company is declared to be in a healthy condition if it has an S-Score value greater than  $>0.862$ , whereas a company with an S-Score value less than  $<0.862$  is categorized as experiencing financial distress.
2. The One Sample t-test is used to test whether the average Springate (S-Score) value differs significantly from the predetermined cut-off value, namely 0.862. This



test aims to determine whether the company is in a condition of financial distress or not based on the average S-Score value.

## RESEARCH RESULTS

### DISCUSSION OF DATA ANALYSIS RESULTS

#### Descriptive Analysis

Descriptive analysis was conducted to determine the overview of the financial condition of PT Waskita Karya (Persero) Tbk based on the research variables used in the Springate S-Score method, namely Working Capital to Total Assets (WCTA), EBIT to Total Assets (EBITTA), EBT to Current Liabilities (EBTCL), Sales to Total Assets (STA), and the Springate Score value.

#### Financial Distress Analysis Using the Springate S-Score Method

The results of the Springate method calculation show that the financial condition of PT Waskita Karya (Persero) Tbk experienced changes during the research period. The results of the descriptive analysis of the Springate S-Score method can be seen in the following table.

**Table 3. Results of the Springate S-Score Method Analysis of Construction Companies for the Period 2014–2024**

| Year    | X1           | X2       | X3          | X4       | S-SCORE  | Description          |
|---------|--------------|----------|-------------|----------|----------|----------------------|
| 2014    | 0,195194314  | 0,229939 | 0,064529889 | 0,328075 | 0,817738 | Potentially Bankrupt |
| 2015    | 0,072751536  | 0,146565 | 0,05395412  | 0,186779 | 0,46005  | Potentially Bankrupt |
| 2016    | 0,090899644  | 0,157225 | 0,045219716 | 0,154909 | 0,448253 | Potentially Bankrupt |
| 2017    | 0,001239736  | 0,204673 | 0,058299935 | 0,184739 | 0,448952 | Potentially Bankrupt |
| 2018    | 0,084371322  | 0,196624 | 0,064332179 | 0,156888 | 0,502216 | Potentially Bankrupt |
| 2019    | 0,03372865   | 0,131212 | 0,019476549 | 0,102415 | 0,286832 | Potentially Bankrupt |
| 2020    | -0,202484405 | 0,132203 | 0,132223502 | 0,064268 | 0,126211 | Potentially Bankrupt |
| 2021    | 0,152976881  | 0,12077  | 0,026355773 | 0,047197 | 0,347299 | Potentially Bankrupt |
| 2022    | 0,045072     | 0,061516 | 0,038752649 | 0,062313 | 0,207654 | Potentially Bankrupt |
| 2023    | -0,012757248 | 0,006383 | 0,108781878 | 0,045837 | 0,148245 | Potentially Bankrupt |
| 2024    | -0,027508541 | 0,002293 | 0,11336621  | 0,055496 | 0,143646 | Potentially Bankrupt |
| Average | 0,433483888  | 1,389404 | 0,725292401 | 1,388916 | 3,937096 | Potentially Bankrupt |

Source: Data Processed by the Researcher, 2026.

Based on the results of the Springate method calculation for the period 2014–2024, it was found that all of the company's S-Score values were below the cut-off value of



0.862. This indicates that the company was categorized as being in a Financial Distress condition during the research period. The highest S-Score value occurred in 2014 at 0.817738, while the lowest S-Score value occurred in 2020 at 0.126211. Thus, the company's financial condition tended to decline and was unable to reach the category of a healthy company based on the Springate method.

### One Sample t-Test

The One Sample t-Test was conducted to determine whether the average Springate S-Score value of PT Waskita Karya (Persero) Tbk differs from the cut-off value of 0.862.

### Research Hypotheses:

- $H_0: \mu \leq 0.862$  : The Springate (S-Score) of PT Waskita Karya Tbk is less than or equal to 0.862 than expected (the company is categorized as being in a Financial Distress condition and is potentially experiencing bankruptcy).
- $H_a: \mu > 0.862$  : The Springate (S-Score) of PT Waskita Karya Tbk is greater than 0.862 than expected (the company is categorized as not being in a Financial Distress condition and bankruptcy).

The results of the One Sample t-Test can be seen in Table 4 below :

| One-Sample Test    |        |    |                 |                 |                                           |        |
|--------------------|--------|----|-----------------|-----------------|-------------------------------------------|--------|
| Test Value = 0.862 |        |    |                 |                 |                                           |        |
|                    | t      | df | Sig. (2-tailed) | Mean Difference | 95% Confidence Interval of the Difference |        |
|                    |        |    |                 |                 | Lower                                     | Upper  |
| S_score            | -8,178 | 10 | ,000            | -,50547         | -,6432                                    | -,3678 |

Source: SPSS Output, 2026.

Based on the results of the One Sample Test with a test value of 0.862, it was found that the average S-Score of the company was below the Springate cut-off value. This is indicated by the mean difference value of -0.50547, which means that the company's average S-Score was lower than 0.862. Thus, it can be concluded that the company was in a Financial Distress condition during the research period.

The results of this study are consistent with the findings of Suadnyana and Musmini (2022), which state that companies with low S-Score values or values below the cut-off limit are classified as being in a Financial Distress condition, thereby having a greater risk of experiencing bankruptcy.

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## CONCLUSIONS AND SUGGESTIONS

### CONCLUSIONS

Based on the results of the Springate method analysis, PT Waskita Karya (Persero) Tbk during the period 2014 to 2024 was in a Financial Distress condition, indicating that the company had the potential to experience financial difficulties and bankruptcy risk.

### SUGGESTIONS

1. PT Waskita Karya (Persero) Tbk is expected to improve the company's financial performance through more effective debt management, increased profitability, and efficient utilization of company assets.
2. The company is expected to improve its liquidity and strengthen cash flow in order to meet both short-term and long-term obligations.
3. Future researchers are expected to use other financial distress prediction methods such as Altman Z-Score, Grover, or Zmijewski so that the research results can be compared and provide more comprehensive findings.

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