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Financial Distress Prediction with Grover Model: Case Study of PT Surya Pangan Indonesia

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Abstract

This research aims to predict financial distress at PT Surya Pangan Indonesia using the Grover model and analyze the results using the Springate model. The study employs quantitative data sourced from the financial reports of PT Surya Pangan Indonesia for the years 2018, 2019, and 2020. The data analysis technique involves calculating financial ratios and applying the Grover and Springate models to determine the company's financial health. According to the Springate model, a score above 1.062 indicates a healthy financial condition, while a score below 0.862 suggests a serious threat of bankruptcy. The results reveal that in 2018 and 2019, PT Surya Pangan Indonesia was in a healthy financial state with Springate scores of 3.748 and 1.174, respectively. However, in 2020, the score dropped to 0.564, indicating severe financial distress. The decline is attributed to decreased profitability and sales amid the pandemic and fluctuating corn prices. This study underscores the importance of early financial distress detection using predictive models, enabling companies to implement corrective measures before reaching a crisis. The findings suggest that PT Surya Pangan Indonesia must enhance its financial management strategies to prevent future distress. Additionally, future researchers are encouraged to compare different financial distress prediction models, such as the Ohlson and Altman models, to develop a more comprehensive understanding of financial health in the Indonesian business context.

1. Introduction

Market-free focused strategies are essential for establishing authority pricing within markets, driving the development of global businesses in Indonesia. This development intensifies competition, particularly among similar companies, and is further amplified by foreign companies entering the market. Consequently, businesses must continually improve and perfect their operations to achieve their goals and maintain sustainable continuity. In line with these conditions, the demand for corn commodities in Indonesia remains unmet, with extremely high demands on corn farmers and distributors. These stakeholders must enhance and maximize their efforts to survive amidst the ongoing crisis and pandemic. In 2021, the need for animal feed reached 14.37 million tons, while available stock was only 1.43 million tons, fulfilling just 10% of market needs (Kompas.com).

The current pandemic poses significant risks to companies, especially PT Surya Pangan Indonesia, a business unit of the University of Muhammadiyah Makassar that operates in the corn trade. The uncertain climate conditions and pandemic have led to several problems, such as decreased production levels and sales, and fluctuating corn prices in 2021. Given these challenges, company managers must effectively and efficiently coordinate resource use to make appropriate decisions.

Every company is established with the hope of generating profits to endure and develop indefinitely. However, this assumption does not always hold true. Companies that have operated for a certain period may be forced to dissolve due to financial distress leading to financial failure. One key component for evaluating company performance is financial statements. These reports result from collecting and processing financial data presented in forms that aid users in assessing performance and making informed decisions. Unfortunately, many companies fail to maximize their financial potential, which can lead to financial distress.

Recognizing financial distress early through an early warning system model is crucial. This model helps identify early symptoms of financial distress, allowing for corrective measures before reaching a crisis. Numerous researchers have developed prediction models to assist potential investors and creditors in selecting companies that avoid financial distress. This need forms the basis for the author's research on financial distress prediction analysis using the Springate model, focusing on PT Surya Pangan Indonesia (PT SPI). In an increasingly competitive economy, this study aims to provide insights into maintaining business stability amidst stringent competition. Based on this background, the author titled the research, "Financial Distress Prediction Analysis with the Springate Model at PT Surya Pangan Indonesia (PT SPI)."

2. Review References

2.1 Report Finance

Understanding financial reports is crucial in evaluating a company's financial position and performance. According to Bond Accountant Indonesia (2015), a financial report is a structured presentation of an entity's financial position and performance. Soemarso (2004) emphasizes that financial reports are designed for decision-makers, especially those outside the company, to assess its financial position and business results. From these definitions, we understand that financial reports provide essential information to interested parties regarding a company's financial status and performance, which is derived from the accounting process over a specific period.

The main objective of financial reports, as highlighted by Bond Accountant Indonesia (2009), is to provide information on a company's financial position, performance, and changes in financial standing for decision-making purposes. Financial reports are not exhaustive, as they do not provide all the information necessary for decision-making, especially non-financial details. They also reflect management's stewardship or accountability for the resources entrusted to them. Kasmir (2008) points out that financial reports consist of recorded facts, accounting principles and conventions, and personal judgments, which influence the content of these reports.

The elements of financial reports, according to PSAK Number 1 (2009), include assets, liabilities, and equity, which are directly linked to the measurement of financial position. Assets are resources controlled by the company, liabilities represent the company's current debts, and equity is the residual interest in the company's assets after liabilities are deducted. Regarding performance, financial reports also include income and expenses. Income reflects an increase in economic benefits through revenue or asset increases, while expenses indicate a decrease in economic benefits through asset reductions or the creation of liabilities.

The qualitative characteristics of financial reports, as outlined by IAI in "Introduction to Accountancy 1" (2009), ensure that the information is useful to its users. These characteristics include understandability, where financial information should be presented in a form and language that aligns with the user's level of understanding; relevance, which ensures that the information is related to the user's objectives; reliability, which demands the information be free from material error and bias; and comparability, which allows financial information to be compared with previous periods or with other companies in the same period.

2.2 Analysis Ratio Finance

Financial ratio analysis is a method used to assess a company's past, current, and potential future financial conditions. This analysis is crucial for understanding a company's financial development over time. It involves interpreting and analyzing the financial data provided in financial reports. According to Lukman Syamsudin (2006), financial report analysis compares the figures in financial statements, such as the profit and loss

statement and the balance sheet, to evaluate a company's financial history, present conditions, and future possibilities. Djarwanto (2018) and James (2018) describe financial ratios as indexes that link two accounting figures by dividing one number by another, allowing for comparisons within the company's financial data. From these definitions, it can be concluded that financial report analysis is an evaluation of a company's financial position, which helps in understanding its business results and progress by comparing various figures in its financial statements.

Financial ratio analysis requires calculating specific ratios that reflect different aspects of a company's financial performance. These ratios can be derived from the figures in the balance sheet and profit and loss statement. Simamora (2007) states that financial ratios are useful tools for evaluating a company's financial position and activities, allowing for comparisons with previous years or with other companies. Sawir (2009) further explains that ratio analysis helps evaluate a company's financial condition and performance by comparing financial data, while Warsono (2003) emphasizes that this analysis provides insight by comparing financial accounts over different periods. By connecting elements of the balance sheet and profit and loss statement, financial ratio analysis offers a comprehensive evaluation of the company's financial standing.

The objective of ratio analysis, as explained by Munawir (2018), is to understand the financial condition of a company and its development during its operational activities. It serves the interests of various parties, including company owners, managers, investors, creditors, government, employees, competitors, suppliers, and the public. The analysis helps each of these parties assess the company's financial health, make informed decisions, and evaluate its future prospects. The benefits of ratio analysis, according to Munawir (2018), include identifying errors in financial reports and revealing inconsistencies in the financial relationships within the company or between the company and external information. Ratio analysis helps to ensure the accuracy and consistency of financial reports, providing a clearer understanding of the company's financial situation.

However, ratio analysis has its limitations. Munawir (2018) highlights that financial ratios are based on accounting data, which may contain errors, manipulation, or inconsistencies due to differences in accounting methods, such as depreciation or inventory valuation. Additionally, financial ratios should be carefully evaluated as high turnover, for example, does not necessarily indicate a company's financial health. Different industries may have different turnover expectations, and comparing ratios across industries can be misleading. Furthermore, financial ratios do not account for inflation or changes in purchasing power. Other limitations include the conservative nature of financial reports, the technical language used, the focus on quantitative over qualitative information, and the general nature of financial reports, which may not meet the specific needs of all users. Additionally, the use of alternative accounting methods can result in variations in financial measurements and assessments of a company's success.

2.3 Condition Company

The financial health of a company reflects its ability to operate its business effectively, manage its assets, and meet its liabilities, while also providing insight into potential financial distress. When a company faces financial difficulties, unresolved problems can lead to financial distress. In response to such challenges, some companies seek solutions through loans or mergers, while others may be forced to close their operations. According to Foster (1986) as cited by Rismawaty (2012), several indicators and sources of information can help identify potential financial difficulties. These include analyzing current and future cash flows, assessing the company's strategy in relation to competitors, cost structures, and expansion plans, and reviewing financial reports to compare the company's performance

with its peers. Additionally, external factors such as securities returns and bond evaluations can serve as indicators of financial distress.

Hadad, Santoso, and Sarwedi (2004) emphasize that in a turbulent financial system, banks must remain competitive with other banks and financial intermediaries by providing superior financial services and adapting to environmental changes. A bank is considered successful in business competition if it can deliver better financial services than its competitors while managing to turn environmental threats into business opportunities. Creative and innovative bank management plays a crucial role in developing profitable products and services without neglecting the principles of asset-liability management (ALMA), which seeks to balance profitability with risk.

2.4 Financial Distress

Financial distress refers to the stage of declining financial health experienced by a company before it reaches bankruptcy or liquidation. Platt and Platt (2002) define financial distress as a condition marked by delays in deliveries, reduced product quality, and the inability to pay bills on time. Endri (2009) categorizes financial distress based on debt default, which occurs when a company fails to pay its debts or shows signs of potential default, often requiring renegotiation with creditors. Brigham and Gapensky (1997) highlight several types of financial difficulties: economic failure (where a company cannot cover total costs), technical insolvency (inability to meet short-term obligations), accounting insolvency (when liabilities exceed assets), and legal bankruptcy (when a company officially files for bankruptcy).

Financial distress arises for several reasons. Lizal (2002) outlines three models that explain its causes: the neoclassical model, which attributes financial distress to poor resource allocation; the financial model, where liquidity constraints lead to short-term failure despite long-term viability; and the corporate governance model, where mismanagement causes inefficiency and financial instability. Several indicators, such as cash flow analysis, competitive strategy evaluation, and financial report analysis, can provide early warning signs of financial distress.

The ability to predict financial distress is essential for various stakeholders, including lenders, investors, regulators, and the government. Accurate predictions can prompt management to take preventative actions, such as mergers or restructuring, before the situation worsens. These predictions are also critical for lenders in deciding on loans and for investors in assessing the company's ability to return principal and interest. Moreover, regulators use financial distress models to evaluate corporate stability and prevent systemic risks.

The impact of financial distress includes both direct and indirect costs. Direct costs, such as legal fees, court expenses, and management time for restructuring, are tangible and measurable. Indirect costs, like lost sales, diminished goodwill, and uncertainty among suppliers, may be more damaging in the long run. Companies facing financial distress often need early detection systems to prevent escalation.

The process of financial distress can be broken down into stages. Initially, a company may face liquidity issues, followed by an inability to meet commercial and financial obligations, eventually leading to bankruptcy. In the banking industry, if a bank encounters financial distress, the Central Bank of Indonesia has the authority to take actions such as injecting capital, replacing management, merging the bank, or even revoking its license if the situation cannot be resolved.

2.5 Ratio Model Springate

According to Adriana (2012), the Springate method, developed by Gordon L.V. Springate in 1978, is a financial model designed to predict corporate financial distress. Springate identified four key financial ratios out of 19 that most effectively contribute to predicting a company's potential for financial

distress. These ratios are combined into a formula, with a critical value of 0.862 serving as the threshold to determine whether a company is likely to experience financial distress or remain healthy.

The Springate formula is as follows:

S = 1.03A + 3.07B + 0.66C + 0.4D

Where:
-A = Working Capital / Total Assets
-B = Profit Before Interest and Tax / Total Assets
-C= Profit Before Tax / Total Current Liabilities
-D= Sales / Total Assets

Interpretation of the Springate score:
1. If S < 0.862, it indicates a serious threat of financial distress.
2. If 0.862 < S < 1.062, the company is in a vulnerable state, and management should carefully manage assets to avoid financial distress.
3. If S > 1.062, the company is financially healthy and unlikely to face financial distress.

This method provides a straightforward way to assess the financial stability of a company based on specific financial ratios.

3. Methodology

The research was conducted at PT Surya Pangan Indonesia (PT SPI) over a two-month period from March to April 2022. The data collection methods used in this study include field research and literature review. In the field research, the documentation technique was employed to gather data from non-human sources such as documents and records. These sources consisted of financial reports and other statements prepared by individuals or organizations for the purpose of verifying events or fulfilling accounting requirements. The specific documents used were the financial reports of PT Surya Pangan Indonesia (PT SPI) from 2018 to 2020.

The literature review method involved studying theories relevant to the research, sourced from books, lecture materials, and other resources. The data types used in this study include quantitative and qualitative data. Quantitative data refers to numerical data, which was obtained from the financial reports of PT Surya Pangan Indonesia for the years 2018 through December 2020. Qualitative data, as defined by Riduwan (2010:106), relates to categorization and characteristics in the form of words. This type of data provided general descriptions of the company, including its history and organizational structure.

The source of data used in this research was secondary data, meaning it was not directly collected by the researcher. The data was obtained through documents, specifically the financial reports of PT Surya Pangan Indonesia (PT SPI), along with other related sources. The population for this study comprised the financial reports of PT Surya Pangan Indonesia, with the sample being the financial reports for three years, from 2018 to 2020.

The method of data analysis used in this research was quantitative, employing financial ratio analysis using the Springate model. The formula for the Springate method is S = 1.03A + 3.07B + 0.66C + 0.4D, where A represents working capital divided by total assets, B is profit before interest and taxes divided by total assets, C is profit before tax divided by total current liabilities, and D is sales divided by total assets. The interpretation criteria are as follows: if the S score is less than 0.862, it indicates that the company is facing serious financial distress and is at risk of bankruptcy; if the score is between 0.862 and 1.062, the management should be cautious in managing the company's assets to avoid financial distress (this is considered a vulnerable zone); and if the S score is greater than 1.062, the company is in good financial health, with no signs of financial distress.

4. Results Study and Discussion

Springate identified four out of nineteen financial ratios that most significantly

contribute to predicting corporate bankruptcy. These four ratios are combined into a formula known as the Springate method. Furthermore, Springate established a threshold value of 0.862 to predict whether a company is likely to go bankrupt or remain healthy. The Springate formula is expressed as:

S = 1.03A + 3.07B + 0.66C + 0.4D

Where:
- A = Working Capital / Total Assets
- B= Profit Before Interest and Tax / Total Assets
- C= Profit Before Tax / Current Liabilities
- D = Sales / Total Assets

The evaluation criteria are as follows:

1) If the S score is less than 0.862, it indicates the company faces a serious threat of insolvency or bankruptcy.
2) If the S score falls between 0.862 and 1.062, it suggests that management must carefully manage the company's assets to avoid bankruptcy (vulnerable zone).
3) If the S score is greater than 1.062, it signifies that the company is in good financial health and does not have any financial problems.

Below are the calculated values of the ratios for PT Surya Pangan Indonesia (PT SPI) for the years 2018, 2019, and 2020.

Table 4.1
Working Capital (WC) / Total Assets (A)

Year	Capital Work (WC)	Total Assets (TA)	A
2018	1,163,751,792.53	3,891,070,978.53	0.299
2019	1,205,153,653.63	9,056,311,714.63	0.133
2020	1,215,667,274.63	8,432,780,514.63	0.144

Source : Data Company processed (2021)

Based on Table 4.1, the WC/TA (A) ratio fluctuated over the years, with values of 0.299 in 2018, 0.133 in 2019, and 0.144 in 2020.

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Table 4.2
EBIT / Total Assets (B)

Year	EBIT	Total Assets (TA)	B
2018	163,751,792.53	3,891,070,978.53	0.042
2019	41,401,861.10	9,056,311,714.63	0.004
2020	10,513,621.00	8,432,780,514.63	0.001

Source : Data Company processed (2021)

According to Table 4.2, the EBIT/TA (B) ratio decreased significantly, from 0.042 in 2018 to 0.004 in 2019, and further to 0.001 in 2020.

Table 4.3
EBT / Current Liabilities (C)

Year	EBT	Current Liabilities (CL)	C
2018	163,751,792.53	2,727,319,186.00	0.060
2019	41,401,861.10	7,851,158,061.00	0.005
2020	10,513,621.00	7,217,113,240.00	0.001

Source : Data Company processed (2021)

As shown in Table 4.3, the EBT/CL (C) ratio also declined each year, from 0.060 in 2018 to 0.005 in 2019, and to 0.001 in 2020.

Table 4.4
Sales / Total Assets (D)

Year	Sales	Total Assets (TA)	D
2018	31,820,588,850.00	3,891,070,978.53	8.178
2019	23,117,332,600.00	9,056,311,714.63	2.553
2020	8,658,576,390.00	8,432,780,514.63	1.027

Source : Data Company processed (2021)

Table 4.4 demonstrates that the S/TA (D) ratio saw a significant decline, from 8.178 in 2018 to 2.553 in 2019, and further to 1.027 in 2020.

Table 4.5
Recapitulation of the Springate Model for 2018, 2019, and 2020

Year	A	B	C	D
2018	0.299	0.042	0.060	8.178
2019	0.133	0.004	0.005	2.553
2020	0.144	0.001	0.001	1.027

Source : Data Company processed (2021)

Finally, the Springate formula calculations for each year are as follows:

Table 4.6
Springate Model Calculations

Year	S = 1.03A + 3.07B + 0.66C + 0.4D	S Value
2018	1.03(0.299) + 3.07(0.042) + 0.66(0.060) + 0.4(8.178)	3.748
2019	1.03(0.133) + 3.07(0.004) + 0.66(0.005) + 0.4(2.553)	1.174
2020	1.03(0.144) + 3.07(0.001) + 0.66(0.001) + 0.4(1.027)	0.564

Source : Data Company processed (2021)

Based on Table 4.6, in 2018, the S value was 3.748, indicating that PT SPI was in good financial health and did not face any risk of bankruptcy (S > 1.062). In 2019, the S value was 1.174, also indicating financial health. However, in 2020, the S value dropped to 0.564, indicating that the company was experiencing financial distress and facing a serious risk of bankruptcy (S < 0.862).

5. Closing

5.1 Conclusion

As for results from Analysis Prediction Financial Distress With Model Spirngate On PT. Sun Food Indonesia can withdrawn conclusion as following:

a. In 2018, the S value (3.748) > 1.062 indicates the company in a healthy financial condition and without problems with finance (No bankrupt),
b. In 2019 the S value (1.174) > 1.062 then show the company in a healthy financial condition and without problems with finance (No bankrupt),
c. In 2020, the S value (0.564) < 0.862 is an indication company face threat bankruptcy Which Serious.

5.2 Suggestion

a. For Company Expected so that party Internal Company so that can injure prevention so that company biased spared from Financial

Distress.

b. Furthermore expected No only to company especially to future researchers not only use the Springate model, Can Also use model Ohlson, model Altman And model Zmijewski, Which No only compare between model, However Can directed to make model predictions financial distress new Which can applied in Indonesia

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