

Research Paper

ANALYSIS OF THE EFFECT OF COMPANY FINANCIAL PERFORMANCE ON FINANCIAL DISTRESS AT PUPUK INDONESIA SUBSIDIARIES

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ABSTRACT

Purpose - This study uses the subsidiaries of PT. Pupuk Indonesia's Springate Score and Altman Z-Score to investigate the relationship between the financial performance of a business and its financial situation. Additionally, this study looks into whether the outcomes of the calculations for the Altman Z-Score and Springate Score differ significantly.

Research Method - The technique of purposeful sampling was used to gather samples from the 2017–2021 annual reports of five PT. Pupuk Indonesia subsidiaries.

Findings - The significant distinction comparing the two test results was further investigated in this study using the Mann-Whitney method.

Implication - Based on the results of computations utilizing distinct financial ratios, the Altman Z-Score and Springate Score models show that liquidity issues can be forecast. However, there is a substantial discrepancy between the two models.

Keywords: Financial Performance, Financial Distress, Altman Z-Score, Springate Score

JEL code: G32 and G33

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INTRODUCTION

Agriculture is one of the sub-sectors that has top priority in everyday life, this is evident from the term "clothing, food and shelter". In the agricultural context, fertilizer is an important and strategic element in increasing productivity and the economy so it cannot be separated from the farming system. As representatives of the people, the government participates in assisting producers in obtaining fertilizer at an affordable price instead of having to pay for them. Organic fertilizers that are purchased and distributed with funding from the government to fulfill producers' requirements are known as subsidized fertilizers. These initiatives are based on government programs in the agriculture sector. Procurement is a procedure for providing subsidized fertilizer originating from domestic production and/or imports, while distribution is a procedure for distributing subsidized fertilizer from the producer level to the level of farmers and/or farmer groups as a consumer. The producer, a BUMN Fertilizer Holding subsidiary, has been assigned to be in charge of distribution and procurement of subsidized fertilizers.

PT. Pupuk Indonesia is an Indonesian state-owned company engaged in the production of fertilizers and chemicals. PT. Pupuk Indonesia has several subsidiaries engaged in the fertilizer sector, such as PT. Pupuk Sriwidjaja Palembang, PT. Pupuk Kalimantan Timur, PT. Petrokimia Gresik, PT. Pupuk Kujang, and PT. Pupuk Iskandar Muda. PT. Pupuk Indonesia has a strategy for carrying out its role as BUMN Holding as of January 1, 2011 PT. Pupuk Indonesia has switched its function to become a strategic and investment holding so that it is more focused on managing corporate operational synergies among its subsidiaries, especially in terms of production, marketing, and engineering and development.

In terms of subsidized fertilizer marketing, Pupuk Indonesia (PI) has optimized the company's sales to the commercial and non-subsidized sectors in terms of tonnage and selling price, PI has even been able to develop a 1,000 fertilizer kiosk program through marketing centralization as a privilege owned by PI as a holding company. This was done in order to facilitate farmers' access to various products produced by the Pupuk Indonesia Group. However, along with the government providing annual compensation funds to replace the proceeds from sales of subsidized fertilizers to farmers, various problems result in sales of subsidized fertilizers declining each year. These factors then have an impact through sales of subsidized fertilizer products which have decreased from year to year.

Several phenomena occur in Pupuk Indonesia's subsidiaries, such as the value instability on the assets and liabilities side of PT. Pupuk Sriwidjaja Palembang and the decrease in profit value that occurred in 2020 from the previous year. Changes in the value of net income each year will affect how financially successful the business is, as well as affect decision making by interested parties. Apart from PT. Pupuk Sriwidjaja Palembang, PT. Petrokimia Gresik has also experienced a quantum decrease in sales of subsidized fertilizers from 2020-2021 of 285,884 tons and in 2021-2022 of 637,534 tons and a decrease in the quantum of sales of non-subsidized fertilizers from 2020-2021 of 38,929 tons and in 2021 -2022 of 197,127 tons. The decline in sales will affect the company's profit because sales revenue decreases following the realization of the number of products sold. A company can earn profit for the year if the difference between all revenues minus expenses is positive,

The decline in sales to manufacturing companies was not only experienced by PT. Pupuk Indonesia's subsidiaries, but manufacturing companies in the cement subsector's basic industrial and chemical sectors also experienced a decline from the previous year. This is evidenced by EBIT and declining sales levels. The decline in sales affected the decrease in revenue and the expenses borne by the company increased so that investors did not want to take the risk of investing in manufacturing companies in the basic industrial sector and chemical sub-cement in Indonesia (Burhanuddin & Rizky Amalia, 2015).

A stable financial condition for a company is needed to support operational activities, but more and more competitors have innovative strategies for developing their companies. This resulted in the business world getting tougher day by day to gain profitability. Companies that are unable to survive will go bankrupt (Amelia & Alwi, 2022). Bankruptcy is a matter that must be prioritized so companies must make prediction calculations based on financial statement analysis. If the financial condition of a company is in an unhealthy condition after the calculation is carried out, it can be said that the company is experiencing financial distress (Pradana, 2020). If the financial condition of a company is in unhealthy condition after the computations are carried out. When a company is in a state of financial distress, several parties are harmed, such as stakeholders and shareholders (Hidayat et al., 2021). Stakeholders get a signal if the company is in an unhealthy condition through the company's financial reports (Afiva et al., 2022). If this happens, the performance and value of a company will be assessed as bad by stakeholders which results in doubts about deciding to invest in shares.

Based on the background of the phenomena that occur, researchers use the Altman Z-Score method and the Springate-Score method as bankruptcy detection tools by comparing the results of the two methods using the t-test as a more in-depth discussion of this article. Analysis of the method used by the author refers to the financial ratios owned by the company. The researcher took a sample of Pupuk Indonesia's subsidiaries, which published an Annual Report on the official website of each subsidiary. This was done because researchers wanted to analyze whether Pupuk Indonesia's goal of becoming a holding company was so that its subsidiaries could focus on production and marketing, as well as for information regarding responsible sales of Pupuk Indonesia.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Financial Performance

Financial performance is a financial analysis that aims to assess efficiency and effectiveness based on the company's operational history. The financial performance also aims to identify gaps between realization and expected results. Financial performance can be used as a basis for determining company priority indicators by looking at the results of calculating financial ratios obtained based on company financial report data and can be used as a solution to predictive results based on calculations. If the prediction results state that the company is in a "safe" state, the company can take a strategy to develop the company through various innovations so that the company does not experience financial distress. However, if the prediction results state that the company is in a "bankrupt" state, the company must decide on what to do to maintain the company's operations in the long term. The higher the risk, the higher the expected rate of return (Borhan et al., 2014). Therefore, companies must strive to increase the value of profitability even higher so that the company can be assessed as having a safe level of efficiency.

Financial Distress

Financial Distress is a situation when the financial performance of a company gets worse so that it is unable to pay off its debts to creditors (Stef, 2021), (Christian, 2022). The discussion on Financial Distress in a company leads to bankruptcy, and failure that occurs when the rate of return realized on invested capital is consistently lower than the level of investment of a similar nature. In addition, financial distress can also occur if income cannot cover all costs or the average return on investment is lower than the company's cost of capital (Alshahrani et al., 2022). There are several methods used to calculate financial distress, namely as follows:

Altman Z-Score Models

The Altman Z- Score model has provided sufficiently accurate substantiation for 2 decades and is a dependable computation formula for assessing the soundness of a company (Almamy et al., 2016). Altman Z-Score also revised the original computation formula with the new name Z" which can develop computations from the point of view of manufacturing and non-manufacturing companies as well as private and public companies (Cindik & Armutlulu, 2021).

$$Z'' = 6,56 X1 + 3,26 X2 + 6,72 X3 + 1,05 X4$$

X1 = Working Capital / Total Assets

X2 = Retained Earnings / Total Assets

X3 = Earnings Before Interest and Taxes/Total Assets

X4 = Book Value of Equity / Total Liabilities

Z'' = Overall Index

Based on this formula, variable X5 has been deleted in order to minimize the potential influence of an industry so that the book value of equity is used to find the value of X4. The criteria for a company are in a certain category, such as when a company has a value above 2.60, it is included in the category of not experiencing losses, when the value is between 1.10 and 2.60, it is included in the gray zone category, whereas if a value below 1.10 means the company has a high level of risk of bankruptcy.

H1: There is a potential for financial distress to occur in PT. Pupuk Indonesia's Subsidiary for the 2018-2022 period which is calculated using the Altman Z-Score.

Springate-Score Models

The Springate model was created by Gordon L.V. Springate in 1978 40 Canadian manufacturing companies, 20 of which were in good health and the other 20 of which were having financial difficulties, made up the sample used in this model. Eventually, Springate discovered 4 ratios with a 92.5% accuracy rate for predicting signs of corporate bankruptcy. (Maulidya & Filianti, 2020).

The following is the equation of the Springate method:

$$\text{Springate} = 1,03 A + 3,07 B + 0,66 C + 0,4 D$$

A = Working Capital to Total Assets

B = EBIT to Total Assets

C = EBIT to Current Liabilities

D = Sales to Total Assets

Based on this formula, there are categories of results as follows:

If the value of S > 0.862, the company is in a healthy condition

If the value of S < 0.862, the company is in a state of bankruptcy

H2: There is a potential for financial distress to occur in PT. Pupuk Indonesia's Subsidiary for the 2018-2022 period based on the Springate Score calculation.

Differences in the Altman Z-Score and Springate Score Methods

In cases were investigating financial distress, the Altman Z-Score and Springate Score methods differ from each other. The significance value, which is less than the value of 0.05 and shows a significant difference between the two methods, illustrates this difference.

H3: When predicting the likelihood of financial distress, the Altman Z-Score system and the Springate Score differ from one another.

RESEARCH METHODOLOGY

Secondary data collected through literature reviews was used in this investigation. Through the official websites of each of PT. Pupuk Indonesia's subsidiaries, information pertaining to financial reports and a comprehensive company profile were gathered in an indirect manner for this literature study.

Empirical Model

In this study using the Altman Z-Score and Springate Score method. This method is used to calculate the financial distress that occurred in a subsidiary of PT. Pupuk Indonesia during the 2017-2021 period. Calculations for this method are obtained from the ratios in the financial statements of the Subsidiary PT. Pupuk Indonesia which include the components of assets, liabilities, and income. These ratios include Working Capital to Total Assets, Retained Earnings to Total Assets, EBIT to Total Assets, and Equity to Total Liabilities.

Variable Operational Definitions

Researchers used the Altman Z-Score and Springate Score methods in working on this article so that the variables used were obtained from these methods and in the form of ratios. Details of the operational definitions of the variables used are as follows:

Working Capital to Total Asset (X1)

Working Capital to Total Assets is liquidity from total assets and net working capital position which is used to fund company operations without disrupting liquidity (Ariyanti et al., 2020). The higher the value of Working Capital to Total Assets, the greater the working capital obtained by the company compared to its total assets (Ben et al., 2015).

$$X_1 = \frac{\text{Current Asset} - \text{Current Liability}}{\text{Total Asset}}$$

Retained Earnings to Total Asset (X2)

Retained earnings are profits that are not distributed to shareholders. Retained earnings are reported on the balance sheet which is not used for dividend payments and others (Maulidya & Filianti, 2020).

$$X_2 = \frac{\text{Retained Earning}}{\text{Total Asset}}$$

EBIT to Total Asset (X3)

The ratio of earnings before interest and taxes to total assets is used to measure a company's ability to generate profits (Ben et al., 2015).

$$X_3 = \frac{\text{EBIT}}{\text{Total Asset}}$$

Book Value of Equity to Book Value of Total Debt (X4)

The comparison between the book value of equity and the total value of book debt is used to detect the ability to turn over funds in all assets during the period the company's operations take place.

$$X_4 = \frac{\text{Total Equity}}{\text{Current Liability} + \text{Non Current Liability}}$$

EBIT to Current Liabilities (X5)

Before Tax to Total Current Liabilities or EBIT to Current Liabilities is a ratio used to measure a company's ability to pay off short-term liabilities (Ben et al., 2015).

$$X_5 = \frac{EBIT}{Current Liabilities}$$

Sales to Total Asset (X6)

The sales ratio is the ratio used to compare net sales to total assets owned by the company. This ratio can measure how efficient a company is in managing its assets so that it can obtain sales revenue. The higher the ratio the more efficient use of the company's total assets to generate sales volume.

$$X_6 = \frac{Sales}{Total Asset}$$

Data Types and Sources

The type of data used in this study is secondary data obtained from the financial statements of each subsidiary of PT. Pupuk Indonesia. The financial statements include a statement of financial position and a statement of profit and loss which are published through the official website of each subsidiary of PT. Pupuk Indonesia.

Population and Sample

The subsidiaries of PT. Pupuk Indonesia, such as PT. Pupuk Sriwidjaja Palembang, PT. Pupuk Kalimantan Timur, PT. Petrokimia Gresik, PT. Pupuk Kujang, and PT. Pupuk Iskandar Muda, were the population of this study, which was conducted over a five-year period, from 2017 to 2021. Purposive sampling has been used in this study, and the criteria required a PT. Pupuk Indonesia subsidiary with complete financial reports that have been posted on each subsidiary's website from 2017 to 2021.

Data Analysis Technique

Data analysis techniques are part of the data submission process after the selection and research data collection stages. This research is quantitative research using descriptive statistics with steps such as calculating the Altman Z-Score Model and Springate Score. The calculation results of the two methods are included in the respective formulas for the Altman Z-Score and Springate Score methods, then the results of the two methods are compared using the Mann-Whitney Test.

RESULTS AND DISCUSSION

Descriptive Statistics

Descriptive statistical analysis is used to describe the state of the research variables statistically. This study uses the average (mean), maximum, minimum, and standard deviation values to describe the statistical description of each variable.

Table 1. Results of Descriptive Statistical Analysis

	N	Minimum	Maksimum	Mean	Std. Deviation
Z-Score	25	0.98777023	6.726817737	3.0533764	1.547368743
Springate	25	0.12745312	1.950982558	0.6264623	0.372356401
Valid N (listwise)	25				

Source: Processed Data (2023)

Table 1 shows that the research sample from the Z-Score method and the S-Score method totaled 25 research data samples. The average value of the Z-Score method is 3.053 while the S-Score method is 0.626. The standard deviation resulting from the Z-Score method is 1.547 with a minimum value of 0.987 and a maximum value of 1.950. The S-Score method is 0.372 with a minimum value of 0.127 and a maximum value of 1.950.

The Potential for Financial Distress in A Subsidiary of PT. Pupuk Indonesia Using the Altman Z-Score Model

The Altman Z-Score model has provided sufficiently accurate evidence for 2 decades and is a reliable calculation formula for assessing the soundness of a company (Almamy et al., 2016). Altman Z-Score then revised the original calculation formula with the new name Z "which can develop calculations from the point of view of manufacturing and non-manufacturing companies as well as private and public companies (Cındık & Armutlulu, 2021).

The revised Altman Z-Score model can be applied to all types of companies such as services and manufacturing. This Altman Z-Score model has assessment criteria as a reference to measure whether a company is in a safe condition. With the following criteria:

1. Z-Score > 2.60 means the company has no potential for bankruptcy.
2. $1.10 < Z\text{-Score} < 2.60$, it is included in the gray zone category.
3. Z-Score < below 1.10 means the company has the potential for bankruptcy.

The following are the results of financial distress research in PT. Pupuk Indonesia's Subsidiaries during 2017-2021 using the Altman Z-Score model.

Table 2. Altman Z-Score Models

Company	Year	Z-Score
Petrokimia Gresik	2017	2.368871
Sriwijaya	2017	1.618987
Kaltim	2017	3.221839
Kujang	2017	3.431012
Iskandar	2017	2.51206
Petrokimia Gresik	2018	2.827091
Sriwijaya	2018	0.98777
Kaltim	2018	3.124566
Kujang	2018	2.990514
Iskandar	2018	2.694856
Petrokimia Gresik	2019	1.267344
Sriwijaya	2019	1.083556
Kaltim	2019	4.859743
Kujang	2019	3.655289
Iskandar	2019	1.375909
Petrokimia Gresik	2020	2.07451
Sriwijaya	2020	2.299625
Kaltim	2020	6.662925
Kujang	2020	4.484324
Iskandar	2020	2.602431
Petrokimia Gresik	2021	2.207518
Sriwijaya	2021	2.803721
Kaltim	2021	6.726818
Kujang	2021	5.383883
Iskandar	2021	3.069249

Source: Processed Data (2023)

Based on table 2, the results of calculations using the Altman Z-Score model show that in 2017-2021 there were companies that showed financial distress, namely PT. Pupuk Sriwijaya in 2018 and 2019 with values of 0.98 and 1.08 which were smaller than 1.10.

The Potential for Financial Distress in A Subsidiary of PT. Pupuk Indonesia Using the Springate-Score Model

The Springate model was created by Gordon L. V. Springate in 1978. The sample used in this model was 40 manufacturing companies located in Canada, namely 20 companies experiencing financial difficulties and 20 which were in good health. Springate finally found 4 ratios that can be used to predict indications of company bankruptcy with an accuracy rate of 92.5% (Maulidya & Filianti, 2020).

This Springate Score has assessment criteria as a reference to measure whether a company is in a safe condition. With the following criteria:

If the value of $S > 0.862$, the company is in a healthy condition.

If the value of $S < 0.862$, the company is in a state of bankruptcy.

The following are the results of financial distress research on PT. Pupuk Indonesia's Subsidiary during 2017-2021 using the Springate Score model.

Table 3. Springate Score

Company	Year	Springate
Petrokimia Gresik	2017	0.439207
Sriwijaya	2017	0.297057
Kaltim	2017	0.729775
Kujang	2017	0.388847
Iskandar	2017	0.517732
Petrokimia Gresik	2018	0.822542
Sriwijaya	2018	0.242804
Kaltim	2018	0.821288
Kujang	2018	0.545659
Iskandar	2018	0.610433
Petrokimia Gresik	2019	0.461135
Sriwijaya	2019	0.201258
Kaltim	2019	0.89242
Kujang	2019	0.59108
Iskandar	2019	0.127453
Petrokimia Gresik	2020	0.613436
Sriwijaya	2020	0.388264
Kaltim	2020	1.147246
Kujang	2020	0.59987
Iskandar	2020	0.323338
Petrokimia Gresik	2021	0.699178
Sriwijaya	2021	0.687497
Kaltim	2021	1.950983
Kujang	2021	1.019613
Iskandar	2021	0.543442

Source: Processed Data (2023)

Based on Table 3, the results of financial distress research at PT. Pupuk Indonesia Subsidiaries using the Springate Score show that in 2017-2018 all Subsidiaries experienced financial distress with a score below 0.862.

In 2019 and 2020, only one Subsidiary did not experience financial distress, namely PT. Pupuk Kaltim with a score of 0.892 and 1.147, higher than 0.862. Whereas in 2021 all Subsidiaries will experience financial distress except for PT. Pupuk Kaltim and PT. Pupuk Kujang with scores of 1.950 and 1.019 higher than 0.862.

PT. Pupuk Kaltim has a high value of financial ratio calculation such as Working Capital to Total Asset with a calculation value of 0.14; EBIT to Total Assets 0.76; EBIT to Current

Liabilities 0.75; and Sales to Total Assets 0.30. Same as PT. Pupuk Kaltim, PT. Pupuk Kujang also has a high value of financial ratio calculation such as Working Capital to Total Asset with a calculation value of 0.19; EBIT to Total Assets 0.23; EBIT to Current Liabilities 0.29; Sales to Total Assets 0.30.

Comparison of the Results of the Altman Z-Score Method and the Springate Score Method

Based on the results of calculations using the Altman Z-Score and Springate Score methods, there are significant differences regarding PT. Pupuk Indonesia's subsidiaries experiencing distress. The following are the results of descriptive statistics on the difference between the Altman Z-Score and the Springate Score.

Table 4. Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Score	50	1.83992	1.65625	0.128	6.727
Group	50	1.5	0.505	1	2

Source: Processed Data (2023)

The sample used by the researcher was 25, which is too small to be used for calculations using the Independent T-Test. For this reason, the researcher then checked using a normality test.

Table 5. Normality Test Results

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Altman	0.177	25	0.043	0.903	25	0.021
Springate	0.154	25	0.129	0.851	25	0.002

The writer uses the normality test to find out whether to use the Independent T-Test or not because the writer doubts that the data is abnormal which is caused by the sample being too small to use the Independent T-Test. Based on the results of the normality test for the Kolmogorov-Smirnov Z section, it has a value of Sig. 0.04 with the Shapiro-Wilk 0.021 section for the Altman method. Meanwhile, for the Springate method, the normality test results for the Kolmogorov-Smirnov Z section have a value of 0.129 with the Shapiro-Wilk section 0.002. With the sig results of the two methods showing a value of less than 0.05, the distribution states that the data is not normal. If the data is not normal, the statistical test performed is not the Independent T-Test but the Mann-Whitney with two non-parametric independent samples.

Based on the results of the normality test which states that the data is not normal, the authors use the Mann-Whitney test with two non-parametric independent samples with results as shown in Table 6.

Table 6. Statistics Test

	Score
Mann-Whitney U	8.000
Wilcoxon W	333.000
Z	-5.908
Asymp. Sig. (2-tailed)	0.000

a. Grouping Variable: Group

Based on the results of the Mann-Whitney Test by looking at the Asymp value. Sig (2-tailed) is $0.000 \leq 0.05$, so there is a significant difference between the Altman Z-Score and

Springate Score methods. These results are based on the probability of a hypothesis. If the probability > 0.05 , then the two populations do not have a significant difference (the two populations are identical), whereas if the probability ≤ 0.05 then the two populations have a significant difference (the two populations are not identical).

Discussion

Based on the Springate Score calculation table which states that in 2017 all of PT. Pupuk Indonesia's Subsidiaries experienced financial distress. There are several analyzes in which each Subsidiary Company experienced financial distress in 2017, such as PT. Petrokimia Gresik, which experienced a decrease in revenue of 8.74% from the previous year. This was caused by sales of subsidized fertilizers which decreased from the previous year by 0.99% while the total production produced by PT. Petrokimia Gresik in 2017 amounted to 5,173,571 or around 11.96% from the previous year.

From the results of these calculations, it results in overproduction so that inventory piles up and the expenses incurred for the production process have not been covered by sales revenue. Apart from that, there are also several factors such as in 2017 there was a decrease in corn imports by 66%, the trend of international prices urea and NPK fertilizers are expected to continue to decline, and ammonia sales in East Java's market share have declined as a result of the majority of the major consumers' needs being satisfied supply over a considerable amount of time from different suppliers.

PT. Pupuk Sriwijaya Palembang in 2017 experienced an increase in sales tonnage of 14.51% from the previous year, but in terms of revenue, it decreased by 24.15 billion or 3.02% from the previous year due to low international selling prices until the third quarter of 2017. International selling price conditions only started to increase in the final quarter of 2017, but have not been able to drive revenue significantly. In addition, trade payables for purchases of raw materials and spare parts from third parties owned by PT. Pupuk Sriwijaya increased by 132.83% from the previous year. PT. Pupuk Sriwijaya Palembang also has other payables to related parties for projects in 2017 which increased by 10.71% from the previous year. In 2017 PT. Pupuk Kujang produced 1 trillion urea, while local and export sales of urea decreased by 10.13% and 0.44% from the previous year. PT. Pupuk Iskandar Muda in 2017 experienced an increase in sales of 0.08% from the previous year but made gross profit decrease due to an increase in the cost of goods sold by 0.15% from the previous year. Several factors affected the current year's comprehensive profit which decreased by 0.88% compared to the previous year other than gross profit, namely profit before income tax which increased in financial expenses, deferred taxes, and other comprehensive income which decreased compared to the previous year by 0.95%.

In 2018, all subsidiaries experienced financial distress when viewed based on the Springate score method, such as PT. Petrokimia Gresik, which experienced a decrease in sales tonnage of 9.41% compared to the previous year. Petrokimia Gresik posted non-fertilizer production in 2018 of 684.09 thousand tons, a decrease of 371.97 thousand tons or 35.22% compared to 2017 of 1,056.06 thousand tons. The decrease came from the reduced production capacity of Granulated Gypsum and Purified Gypsum by 99.44% and 21.84%, respectively.

Based on the Springate and Altman Z-Score methods in 2018 showed that PT. Sriwijaya was experiencing financial distress due to several factors such as a decrease in domestic subsidized urea and organic fertilizer sales by 3.27% and 100.00% from the previous year. In addition to declining domestic fertilizer sales, domestic ammonia sales also decreased by 41.34% from the previous year. At PT. Kalimantan Timur there was a decline in domestic sales of 45.60% from the previous year, this was due to NPK sales not meeting the target, which was 12% lower than last year's sales. The background to the decline in NPK was the price of palm

oil which resulted in a decrease in demand for fertilizer for certain commodity needs. In addition, PT. Pupuk Kujang experienced a decrease in NPK fertilizer subsidy income of 6.78%, and PT. Iskandar Muda experienced a decrease in income of 10.52% from the previous year.

In 2019 PT. Petrokimia Gresik produced non-fertilizers higher than 2018 of 3 trillion tons, but sales of non-fertilizers were lower than in 2018 by 7.45%. In addition to these problems, there are also reasons why PT. Petrokimia Gresik can be said to be experiencing financial distress, this is due to a number of sizable plantations starting to establish NPK factories for their own needs, a decline in East Java's ammonia market share as a result of one customer being supplied by another supplier, the dominance of imports among competitors in the inorganic fertilizer market, high subsidy receivables, and interest loans. The financial distress experienced by PT. Pupuk Sriwijaya was caused by several things, namely a decrease in revenue of 1.32 trillion rupiahs or 13.60% compared to the previous year. The decrease in revenue was affected by PT. Pupuk Sriwijaya's less-than-optimal sales because in addition to marketing retail and innovation products in the regions, PT. Pupuk Sriwijaya also worked with a network of Subsidized Distributors in order to maintain stock availability in managed kiosks so that they were more easily accessible to farmers who did not receive subsidy allocations, and the recording of sales transactions carried out by Pupuk Sriwijaya Martin 2019 is still being done manually and is reported in stages from the regions to the center. Furthermore, regarding PT. Pupuk Kaltim, there was a decrease in revenue caused by a decrease in subsidized and non-subsidized sales of 23.84% and 5.41% compared to 2018. This occurred due to several factors such as decreased sales in the domestic market, a factory equipment repair program, as well as the decline in international market demand, and company policies that direct sales to products that are able to provide better margins. PT. Kujang experienced financial distress because profit for the year decreased by 4.39% compared to 2018 which was caused by the high cost of goods sold and operating expenses of 2.65% and 4.74% compared to 2018. The background factor why PT. Iskandar Muda experienced financial distress was income which decreased by 19.30% compared to 2018, this was due to the realization of sales of commercial urea fertilizer of 25,661 tons or 29% of the planned 90,000 tons. This was due to PT. PIM's production costs being still higher than market prices and PT. PIM only selling commercial products from PI Group manufacturers.

In 2020, based on the Springate Score method, PT. Petrokimia Gresik experienced financial distress caused by a decrease in sales of 8.89% compared to 2019. The decrease in sales occurred because the realization of fertilizer sales decreased by 2.77 trillion or 12% compared to 2019 which was caused by fertilizer allocation of subsidized fertilizers in 2020. Subsidized fertilizers that have decreased include subsidized fertilizers ZA, SP-36, and Petroganik.

The financial distress that occurred at PT. Pupuk Sriwijaya was due to an increase in revenue but with an increased cost of goods sold and selling expenses resulting in a decrease in profit for the year by 72% compared to the previous year. PT. Pupuk Kujang experienced financial distress caused by a more significant increase in the cost of goods sold compared to the previous year, even though sales results were higher than the previous year, affecting gross profit and profit for the year. Gross profit and profit for the year decreased significantly from the previous year by 4% and 34.82%. PT. Pupuk Iskandar Muda experienced a significant decrease in profit for the year of 273.90% compared to the previous year.

Based on the calculation results using the Springate Score method in 2021, three PT. Pupuk Indonesia subsidiaries are experiencing financial distress, namely PT. Petrokimia Gresik, PT. Pupuk Sriwijaya, and PT. Iskandar Muda. Some of the factors include the declining sales of subsidized fertilizers and the company's focus on fulfilling subsidy allocations in line with the additional subsidy allocations from the Government.

CONCLUSION AND SUGGESTION

Based on the results of the analysis through the calculation of the Altman Z-Score and Springate Score methods, this research can be concluded that there is an effect of financial distress on a subsidiary of PT. Pupuk Indonesia using both methods, and there are differences in the results of bankruptcy prediction between the two methods due to financial ratio calculation variables and different cut-off scores. The difference between the two methods is in the EBIT to Current Liabilities and Sales to Asset formulas which are not in the revised Altman Z-Score method, so the Springate Score has a more significant predictive accuracy compared to the Altman Z-Score based on the entire sample. If a company experiences financial distress, it can be said that its financial condition is not in good health. By conducting this research, it is hoped that investors and potential capital providers in a subsidiary of PT. Pupuk Indonesia can conduct an analysis in advance using the Springate Score model, and the Altman Z-Score to see how likely a company is to face bankruptcy because this can affect investors in making investment decisions.

It is true, the results of the analysis cannot be used as the only guideline in investing because they are not a real situation, but this research will be very helpful in seeing the health condition of a company based on the results that have been analyzed. In addition, companies such as management can also prepare strategies to prevent or overcome if the company is really experiencing a state of financial distress.

This research is a study where the data is not normal because the research sample is less than 30, so it is hoped that for further research on financial distress in PT. Pupuk Indonesia's subsidiaries, it can use even more samples, such as within a period of 10 years so that it can provide variations in research data and produce research that is more representative of the actual situation in predicting financial distress. The calculation method does not only use the Altman Z-Score and Springate Score but can also use other methods such as Grover, Fulmer, Zavgren, and so on.

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