Analysis of Potential Bankruptcy with The Springate Method in Oil and Gas Subsector Companies Listed on The IDX 2018-2021

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Abstract

Changes in world oil prices are a things that must be considered, because they can affect the selling price of crude oil and the profits to be obtained. Apart from that, the rupiah exchange rate against the US dollar is also one thing that needs attention. These conditions become one of the considerations for investors whether the results of the investment can provide profits or have a loss. One of the problems that must be considered is financial distress. The aims of this research is to use the Springate method to analyze the potential for bankruptcy in oil and gas subsector companies. This research uses a quantitative descriptive approach and data collection uses documentation techniques by taking secondary data from the website of the Indonesia Stock Exchange. The sample was selected using certain sampling criteria, so that the sample in this study amounted to 10 companies. The results of the analysis of potential bankruptcy using the springate method in 2018 to 2020 show that there are 8 companies in the distress zone and 2 companies in the safe zone. In 2021 there are 9 companies in the distress zone and 1 company in the safe zone.

Keywords: Bankruptcy Potential, Springate Method, Oil and Gas Subsector

Introduction

Every industry competes to achieve better business results every year. The Central Statistics Agency (BPS) noted that Indonesia's economic growth grew by 5.02% in 2019, but decreased compared to 2018 which was 5.17%. All sectors contributed to this growth. However, the oil and gas mining business sector decreased by 2.83% in 2019.

Indonesia as a crude oil exporting country has attracted investors to invest in the Indonesian oil and gas mining sector. Changes in world oil prices are a things that must be considered, because they can affect the selling price of crude oil and the profits to be obtained (Tiono & Colline, 2020). Investors are required to be able to know the progress of the company

by reading the signs if there is a problem in the business which can result in losses in the investment that has occurred. One of the problems that must be considered, its financial difficulties which can be interpreted as the inability of the company to pay its liabilities which can lead to bankruptcy of the company. When a company goes bankrupt, many parties will suffer losses, both internal and external parties of the company such as investors and creditors (Risnanti et al., 2019).

Bankruptcy or also known as financial distress is caused by the instability of the business in managing and maintaining financial performance resulting in losses in the current year (Saputro & Hendayana, 2022). Bankruptcy potential analysis is used as an early warning of potential bankruptcy. The sooner bankruptcy can be detected, the faster the company's management can handle the occurrence of the bankruptcy.

By doing bankruptcy analysis, the company can be used as material for consideration by investors before investing their capital in the company and can be the basis for decision making by company management. Based on some of the things that have been explained, the author intends to conduct research with the title "Analysis of Potential Bankruptcy with The Springate Method in Oil and Gas Subsector Companies Listed on The IDX 2018-2021".

Literature Review

Signaling Theory

Signal theory was put forward in 1973 by Michael Spence, meaning that the information owner conveys indications or signals in the form of information that reflects the state of the company that is useful for investors (Masdiantini & Warasniasih, 2020). This theory can be used to convey that financial statements can be used to provide positive and negative signals for users of financial statements.

Signal theory emphasizes the importance of reports published by companies on the decisions of investors as external parties of the company. The results of bankruptcy analysis can also be used as a signal to outsiders about what conditions will happen to the company in the coming years (Pangkey et al., 2018).

Financial Performance

According to (Sari, 2021) stated that financial performance is a condition that describes the finances of a company analyzed using financial analysis tools to understand the good and bad financial position of the company, so that it reflects work performance. The development of financial performance can be seen from the financial statements of each company which is illustrated by the information in balance sheet, income statement, statement of changes in equity and cash flow statements of the company, as well as other posts that helpful in assessing the company's financial performance. In business, financial performance is a basic reference in knowing how far a company has achieved its.

Financial Statements

According to (Siregar, 2020) explains that financial reports are a structured description of the financial condition of an entity, are part of the accounting process and contain

information about the entity including assets, liabilities, equity, income and costs, as well as awarding and distributions to owners. Financial statements are prepared following general principles that make it easy to understand the actual financial condition of a company.

In general, financial reports are intended to share company financial information with parties internal and external the company in the form of total assets, total liabilities, total incomes, total expenses and other financial-related information during a certain period of time. The preparation of financial statements is submitted to internal and external parties of the company such as owners, management, creditors, investors and the government. Informative financial statements must have the characteristics of financial reports, which are easy to understand, relevant, material, reliable and comparable.

Financial Statement Analysis

According to (Permatasari & Yunita, 2019) financial statement analysis is a technique of dissecting financial statements and looking at each of these elements to obtain a good and accurate interpretation of reports. Meanwhile, financial statement analysis according to (Thian, 2022) is a method that helps decision makers identify company strengths and weaknesses by using information from financial statements. So that the conclusion about the meaning of financial statements is the process of analyzing and evaluating all elements of financial statements and comparing the current year's financial statements with other years to obtain a good and accurate understanding of this information, so that you can find out the company strengths and weaknesses which will help the company's management in making decisions.

From a management perspective, financial statement analysis explains the company's current financial position and to determine the success of previously planned targets, as well as provide an overview of the company's weaknesses and strengths of performance. Financial statement analysis has limitations that must be considered, according to (Kusumah, 2018), is historical financial statements, financial statements describe the value of the cost of goods at the time of the transaction, financial statements are general, recording of financial statements does not avoid the use of estimates, accounting does not include information is immaterial, financial statements are conservative, financial statements are prepared in technical terms, quantitative data dominate in accounting information, and changes in the purchasing power of money are clearly visible even though they are not reflected in the finansial.

Bankruptcy

A company is declared bankrupt if the company's assets cannot cover all debts that must be borne by the company (Melissa & Banjarnahor, 2020). Meanwhile, according to (Kusumayuda et al., 2022) bankruptcy is a situation when cash flow from operating activities is unable to pay short-term debt and the company is forced to take corrective steps.

For lenders such as banks, bankruptcy prediction information is useful to consider when providing loans to companies and whether the company can return the debt that has been given. For investors, the existence of bankruptcy prediction information is useful to be aware of the company's condition earlier, so that it can be considered for investing. By predicting bankruptcy, it allows management to know the possibility of bankruptcy earlier, so that management can take preventive action.

Bankruptcy indicators showing signs of bankruptcy that can be seen by external parties, for example: continuous decline in profits, decrease in dividends paid for consecutive periods, termination or sale of one or more business units, mass layoffs and continuously declining market prices. Likewise, there are indicators that are known to the company's internal parties, for example: a decrease in the level of sales caused by the inability of management to implement strategies, a decrease in the ability to generate profits and dependence on large debts.

Springate Method Bankruptcy Analysis

Springate method (S-Score) is one of the models used in estimating bankruptcy. The springate method is a bankruptcy method developed by Gordon L.V. Springates in 1978 (Fitriani & Huda, 2020). Springate developed Altman's Multiple Discriminant Analysis (MDA) method to predict signs of bankruptcy.

Springate method uses four financial ratios to distinguish between companies that have the potential to go bankrupt and those that do not have the potential to go bankrupt. The ratio is explained as follows:

Working Capital to Total Assets (X_1)

This ratio is part of the liquidity ratio to assess a company's ability to pay off its short-term debt (Marlinda & Yulia, 2020).

$$X_1 = \frac{Current\ Assets\ - Current\ liabilities}{Total\ Assets}$$

Earnings Before Interest and Tax to Total Assets (X_2)

This ratio compares EBIT to a company's total assets. This ratio can assess the company's ability to generate profits from the assets used.

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

Earnings Before Tax to Current Liabilities (X_3)

This ratio assesses a company's ability to pay short-term debt by assessing the ratio of EBT to current liabilities.

$$X_3 = \frac{EBT}{Current\ Liabilities}$$

Sales to Total Assets (X_4)

This ratio shows the effectiveness of generating sales by utilizing all assets owned. If the turnover of assets is getting bigger, the more efficiently these assets can be used to generate sales.

$$X_4 = \frac{Sales}{Total\ Assets}$$

The four ratios are combined in an equation developed by Gordon L.V. Springate, namely the Springate method (S-Score). Here is the equation for the springate method:

$$S = 1,03 X_1 + 3,07 X_2 + 0,66 X_3 + 0,4 X_4$$

The cut-off value in the springate method, namely:

S > 0,862 = Safe Zone.

S < 0,862 = Distress Zone.

Research Method

This research uses a type of quantitative descriptive research. According to (Musfirah et al., 2022) the quantitative research method is a type of research in which the details are systematic, designed and clearly structured from the beginning to the preparation of a research plan. Descriptive research aims to describe the results of potential bankruptcy with the springate method.

The data source used is secondary data obtained indirectly from the Indonesia Stock Exchange's website for the financial statements of oil and gas subsector companies for the 2018-2021 period. Following are the criteria for sampling:

1. Companies in the oil and gas subsector that are listed on the Indonesia Stock Exchange.
2. Companies in the oil and gas subsector that have had Initial Public Offerings (IPO) on the Indonesia Stock Exchange during 2018-2021.
3. Companies in the oil and gas subsector which presented their financial statements consecutively for 2018-2021.

Therefore, there were 10 companies that met the criteria and would be used in this study. The Springate method is utilized as a research method to measure potential bankruptcy.

Result/Findings

Working Capital to Total Assets Ratio (X_1)

Kode Emiten	Tahun			
	2018	**2019**	**2020**	**2021**
APEX	-0,678	0,099	0,137	0,134
ARTI	0,170	-0,139	-0,828	-1,096
BIPI	-0,165	0,040	-0,236	-0,230
ELSA	0,184	0,175	0,217	0,261
ENRG	-0,428	-0,384	-0,269	-0,123
ESSA	0,086	0,121	0,011	0,074
MEDC	0,138	0,165	0,087	0,122
PKPK	0,285	0,177	0,073	0,095
RUIS	0,051	0,016	0,032	0,070
SURE	-0,628	-0,396	0,424	0,368

Source: data processed, 2023

The smallest value Working Capital to Total Assets ratio is obtained in 2021 by a company coded ARTI with a value of (-1,096). Meanwhile, the company with the highest value is the company coded SURE in 2020 with a value of (0,424).

Earnings Before Interest and Tax to Total Assets Ratio (X_2)

Kode Emiten	Tahun			
	2018	**2019**	**2020**	**2021**
APEX	-0,130	0,090	0,177	0,030
ARTI	0,045	-0,537	-0,676	-0,203
BIPI	0,097	0,079	0,070	0,084
ELSA	0,078	0,075	0,063	0,045
ENRG	0,075	0,174	0,165	0,140
ESSA	0,052	0,031	-0,005	0,109
MEDC	0,074	0,064	0,029	0,090
PKPK	0,004	-0,131	0,043	0,011
RUIS	0,088	0,080	0,078	0,067
SURE	0,048	0,078	0,038	-0,033

Source: data processed, 2023

The company coded ARTI with a value of (-0,676) get the lowest value in 2020 and company coded APEX in 2020 with a value of (0,177) get the highest value.

Earnings Before Tax to Current Liabilities Ratio (X_3)

Kode Emiten	Tahun			
	2018	**2019**	**2020**	**2021**
APEX	-0,260	1,476	6,939	0,410
ARTI	0,254	-1,181	-0,799	-0,189
BIPI	0,054	0,121	0,069	0,067
ELSA	0,166	0,186	0,134	0,079
ENRG	0,028	0,220	0,302	0,443
ESSA	0,267	-0,140	-0,415	0,103
MEDC	0,183	0,222	-0,082	0,284
PKPK	-0,514	-108,519	0,098	-3,302
RUIS	0,094	0,086	0,077	0,053
SURE	-0,085	0,022	-0,439	-1,300

Source: data processed, 2023

The results above show that the smallest Earnings Before Tax to Total Assets ratio is a company coded PKPK with a value (-108.519) in 2019. Meanwhile, company coded APEX obtained the highest value in 2020 with a value of (6,939).

Sales to Total Assets Ratio (X_4)

Kode Emiten	Tahun			
	2018	**2019**	**2020**	**2021**
APEX	0,178	0,188	0,163	0,182
ARTI	0,112	0,097	0,031	0,009
BIPI	0,022	0,057	0,058	0,069
ELSA	1,171	1,232	1,022	1,125
ENRG	0,374	0,492	0,385	0,382
ESSA	0,162	0,248	0,222	0,375
MEDC	0,232	0,229	0,187	0,233
PKPK	0,053	0,185	0,252	0,048
RUIS	1,311	1,276	1,200	1,268
SURE	0,491	0,320	0,307	0,340

Source: data processed, 2023

The results above show that a company coded ARTI has the lowest Sales to Total Assets ratio value of (0.009) in 2021. In 2018, company coded RUIS received the highest value of (1,311).

Springate Calculation Results

Kode Emiten	2018		2019		2020		2021	
	S-Score	Keteranggan	S-Score	Keteranggan	S-Score	Keteranggan	S-Score	Keteranggan
APEX	-1,197	Distress Zone	1,427	Safe Zone	5,328	Safe Zone	0,574	Distress Zone
ARTI	0,526	Distress Zone	-2,533	Distress Zone	-3,444	Distress Zone	-1,872	Distress Zone
BIPI	0,173	Distress Zone	0,385	Distress Zone	0,040	Distress Zone	0,093	Distress Zone
ELSA	1,008	Safe Zone	1,025	Safe Zone	0,915	Safe Zone	0,908	Safe Zone
ENRG	-0,044	Distress Zone	0,480	Distress Zone	0,582	Distress Zone	0,750	Distress Zone
ESSA	0,490	Distress Zone	0,225	Distress Zone	-0,190	Distress Zone	0,630	Distress Zone
MEDC	0,585	Distress Zone	0,605	Distress Zone	0,199	Distress Zone	0,682	Distress Zone
PKPK	-0,014	Distress Zone	-71,767	Distress Zone	0,372	Distress Zone	-2,027	Distress Zone
RUIS	0,910	Safe Zone	0,830	Distress Zone	0,803	Distress Zone	0,820	Distress Zone
SURE	-0,357	Distress Zone	-0,025	Distress Zone	0,387	Distress Zone	-0,446	Distress Zone

Source: data processed, 2023

In 2018, there were 8 companies in the distress zone category, namely companies coded APEX, ARTI, BIPI, ENRG, ESSA, MEDC, PKPK and SURE. In 2019 and 2020 the results were the same, there were 8 companies in the distress zone category, namely companies coded ARTI, BIPI, ENRG, ESSA, MEDC, PKPK, RUIS and SURE. Meanwhile, in 2021 there were 9 companies in distress zone category, namely companies coded APEX, ARTI, BIPI, ENRG, ESSA, MEDC, PKPK, RUIS and SURE.

Conclusion

Based on the research results that have been described, it can be concluded that companies that have been in the distress zone category for 4 consecutive years are companies coded ARTI, BIPI, ENRG, ESSA, MEDC, PKPK and SURE. Companies in the safe zone category for 4 consecutive years are company coded ELSA. Furthermore, companies that experience increases and decreases each year are companies coded APEX and RUIS.

In this research still has limitations and this research certainly has disadvantages that need to be continuously improved in future research. Some limitations in this research are the small sample size used, the object of research is only in one sector, and the research methods used are not many.

Based on the conclusions and limitations of the research above, there are some suggestion that are expected to be input for further research. Some suggestions among them are being able to use more research samples, being able to use research objects in different sectors, being able to use or adding other research methods such as the Altman method, zmijewski method, Grover method and others methods.

Declaration of conflicting interest

The authors declare that there is no conflict of interest in this work.

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