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ANALYSIS OF COMPANY BANKRUPTCY USING THE GROVER MODEL AND THE SPRINGATE MODEL (Case Study of Food and Beverage Listed on the Indonesia Stock Exchange in 2019-2021)

Siti Nur Fauziah[1], Mochamad Kohar Mudzakar[2]
Faculty of economics and business, Widyatama University

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ABSTRACT

The purpose of this research is to predict bankruptcy with the Grover and Springate models for food and beverage companies listed on the Indonesia Stock Exchange. The study was conducted on 27 companies as samples which were taken based on the purposive sampling technique for the 2019-2021 period. The research method used is explanatory with investigative descriptive. The results of the 2019 Grover Model research, 25 companies are in the healthy category and 2 companies are in the bankrupt category; in 2020, 23 companies are categorized as healthy and 4 companies are categorized as bankrupt; In 2021, 22 companies are categorized as healthy and 5 companies are categorized as bankrupt. The 2019 Springate Model, 20 companies are in the healthy category and 7 companies are in the bankrupt category; in 2020, 18 companies in the healthy category, 1 company in the grey area category and 8 companies in the bankrupt category; In 2021, 15 companies are in the healthy category, 1 company is in the gray area category and 11 companies are in the bankrupt category.

E-mail:
Fauziah.siti@widyatama.ac.id
Kohar.Mudzakar@widyatama.ac.id

1. INTRODUCTION

The company is a level of organization or agency that processes production activities continuously in order to gain profits by trading goods and services. In carrying out its business the company is a profit-oriented legal entity. Judging from the aspect of its activities, the company can be classified into service companies, trading companies, and manufacturing companies.

The Food and Beverage is a sector of a manufacturing company engaged in the food and beverage industry. In Indonesia, Food and Beverage are growing rapidly. Judging from the number of companies listed on the Indonesia Stock Exchange from period to period the number is increasing. Food and Beverage companies were chosen because they have an important role in meeting consumer needs, Food and Beverage companies are still surviving compared to other sectors under any circumstances, because food and beverages are a basic need for people throughout Indonesia.

The Food and Beverage is also one of the sectors that has received priority for development, among others being encouraged to apply industrial technology 4.0. This digital transformation is considered to have a positive impact on increasing investment and productivity in the industrial sector and creating a competent workforce. The Ministry of Industry noted that the performance of the food and beverage industry during the 2019-2020 period grew by an average of 8.16% or above the average growth of the non-oil and gas processing industry of 4.69% [1] .

Two years ago the Food and Beverages (F&B) industry was one of the sectors affected by the Covid-19 pandemic. The prohibition of social interaction in the community causes people to tend to refrain from excessive consumption and choose to prioritize meeting basic needs. The emergence of the Covid-19 pandemic had an impact on the growth of the food and beverage business in the first quarter of 2020. The Indonesian Food and Beverage Entrepreneurs Association (GAPMMI) said food and beverage sales in the first three months of this year only grew 2% compared to last year. This figure missed the target they set at the beginning of the year, which was 2.5%. Gapmmi Public Policy Deputy Chairperson Rachmat Hidayat said the decline occurred in bottled drinking water and soft drinks in line with the social distancing policy[2].

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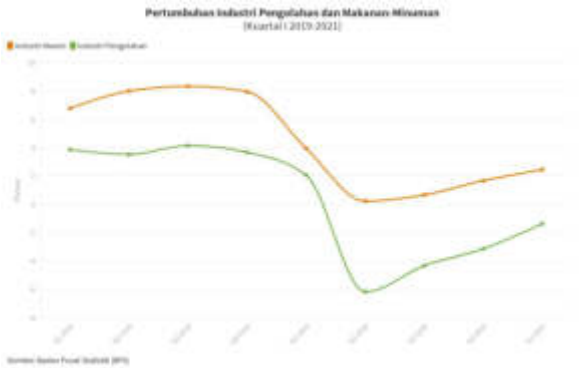

Source: Central Bureau of Statistics (BPS)
Figure 1. Growth of the Food and Beverage

Based on Graph 1.1, it can be seen that the processing of the Food and Beverage industry has decreased from 2019 to 2021. The decline in 2019 occurred due to the Covid-19 pandemic which affected the growth rate in food and beverage processing. When a company is not able to carry out processing activities and resource performance, the company is unable to compete so that it will experience losses as is the case with Food and Beverage companies. However, in 2021 the performance of the Food and Beverage will begin to improve, inseparable from the hard work of all stakeholders, from the relevant ministries and institutions to the industry, to produce positive growth despite being affected by the pandemic [3]–[5].

As an effort to reduceathe impact ofathe Covid-19xpandemic, the government hasalaunched the NationalaEconomic Recoverya(PEN) programiwhich aimsatoaprotect, maintain and increase the economic capacity of business actors in running their businessesaduring theaCovid-19 pandemic. With theaimplementation of this policy, it is hopedathat the performance of the food andxbeverage industry, which before the pandemic was able to grow by around 7% to 9%, can return to brilliancea[6]....

However, with the efforts of the government and stakeholders, not allaFood and Beverage especiallyathose listedaon the IndonesianaStock Exchange,.not all ofathem experienced aadirect increase, many companiesaalso experienced financialadistress Financial distressais a situation whereaa companyaexperiencesafinancialadifficultiesatoafulfillaitsaobligations,aaAconditionAwhereatheacompany 'saincome cannot coveratotal costs andasuffers losses [7], [8].

Theatimes areafollowed by technologicaladevelopments and changesain the economic cycleathat cause theabusiness world toaalso continue toaexperience changes.aThis change hasaan impact on the intenseacompetition experienced by allaactors in the businessaworld[9].. viability of theacompany in the midstaof ongoing changes.aThe tofrom corporate bankruptcy..

Bankruptcyais usuallyainterpreted as a company's failure to carry out company operations to generate profits'[10] According toaLaw No. 4 of 1998, an institution is declaredaby the courtaif theadebtor has twoaor more creditorsaand does not payaat least oneadebt that is dueaand collectible.xBankruptcy is oftenaalso called companyaliquidation oracompany closureaor insolvency. Bankruptcy in a company means the company's inability to achieve the goals it wants to achieve.'Bankruptcy also causes the loss of allacompany operating activities and relationships between parties related to the company'. Therefore, severalatheoretical approachesaand financial analysis model toolsacan be used to anticipateathe potential forabankruptcy.''

The emergence of various bankruptcy prediction models is an anticipation and early warning system for financial distress because these models canabe used as a means to''identifyaand even improve conditionsabefore reaching a crisis or bankruptcy.;'Research on bankruptcy prediction models has been carried out a lot, giving rise to various bankruptcy prediction models that are used as a tool to improve company conditionsabeforeathe company goes bankrupt [11].'

Argues that bankruptcyxor financial failure occursawhen the amountaof liabilities exceeds the fair value of assetsaor when current liabilitiesaexceed current assets..Bankruptcy or financial failure experienced by most companies can have a negative impact on the world economy[12]..

Consider that bankruptcy occurs quickly in countries experiencing economic difficulties or financial crises[13]. State that corporate bankruptcy is marked by a prolonged andacontinuous decline in

the company's financial conditiona(financialadistress)The causes of bankruptcyacan come from internalaand externalafactors of the company[14], [15].

There are different resultsabetween previous researchersain predictingathe financial distress of a company[16].'aComparing the Altman,aSpringate, andaZmijewski methods inapredicting financial distress.aThe results showathat the Springate S-Scoreamodel is the most accurateamodel forapredicting the bankruptcyaof Islamic banks inaIndonesia[17] conducted researchawith the results, the Springateamethod is a predictionamethod with theahighest level of accuracyaso that it is suitableafor mining companiesalisted on the IndonesiaaStockaExchange (IDX).''

In their journal research shows that theaGrover scoreamodel has a positiveaeffect on financialadistress in retail companiesagoing public fromathe period 2015 to 2018. The higherathe grover scoreaindicatesathat the companyais experiencing financial distress.iBankruptcy detection tools thatacan be used includeathe Grover Model and the Springate Model which were created through an assessment and redesign of the Altman model,.each of which has a different level of accuracy, so it is necessary to test the application of the analysis in the field[17], [18].

Basedaonathe phenomena that occur,athe authors arexinterested inaconductingaresearch on bankruptcy prediction in food andabeverage sector companies that are registeredaon the Indonesian Stock Exchangea(IDX), using 2 bankruptcy prediction methods.;"GROVER MODELaANDaSPRINGATE MODEL (Case Studyaof Food and Beverage Listed on the IndonesiaaStock Exchangeain 2019-2021)".;

2. METHOD

2.1 Jenis and Data Source

This study uses a quantitative descriptive analysis model byacalculating the bankruptcy value based on the bankruptcyamodel formula for each company studied, then analyzing thearesults of the calculation, then calculating the averageabankruptcy value basedaon the bankruptcyamodel formula. Bankruptcy scoresawere analyzed accordingato the weights and criteria of each model, then compared between models. Hypothesisatesting is done by comparing the 2 predefined models.;'

The data usedain this study is included in the secondaryadata, namely data that has been published in theaform of company data in the food and'beverage sector and its financial reports. Secondary data is the type of data in research based on how to obtain it, which means that the source of research data is obtained and collectedaby researchers indirectlyabut with other parties (Indrianto and Supomo, 1999). secondary data in thisastudy is in the form of information through the annualreportsof manufacturing companies obtained from the IndonesiaaStock Exchange forathe 2019-2021 period...

2.2 Analysis Method

The stages of data analysis carried out are:

1. Obtain the necessary data, namely financial reports (already processed) listed on the Indonesia Stock Exchange in the food and beverage.
2. Calculating financial ratios

Calculating the value of the modified Grover Model from known financial ratios[19]. The Grover Model formula is:

$$Score = 1.650X1 + 3.404X2 - 0.016ROA + 0.057$$

Score = Results of analysis of the Grover Model
Model X1 = Working Capital ÷ Total Assets
X2 = Earning before Interest and Taxes ÷ Total Assets
ROA = Net Income ÷ Total Assets Coefficients
The Grover model categorizes companies in the following circumstances:
Score < -0.02 : Companies in the bankrupt category
Score > 0.01: Companies in the Not Bankrupt category

Calculating the value of the modified Springate Model from known financial ratios[20]The Springate Model formula is:

$$Score = 1,03\ A + 3,07\ B + 0,66\ C + 0,4\ D$$

Score = Springate Model analysis results
A = Working Capital to Total Assets
B = Earning Before Interest and Taxes (EBIT) to Total Assets
C = Earning Before Tax (EBT) to Current Liabilities

D = Sales to Total Assets
The Springate model categorizes companies:
Score > 0.862: The company is classified as healthy
Score < 0.862: The company is in the bankrupt category
3. Perform interpretation.
- In the Grover Model
Score Model < -0.02: Companies in the bankrupt category
-0.02 < G "< 0.01: Grey area.
Score > 0.01 : Companies in the Not Bankrupt category
- In the Springate Model
Score > 0.862: The company is classified as healthy
0.862<S<0.862: Grey Area
Score < 0.862: The company is in the bankrupt category
4. Draw conclusions about predicting company bankruptcy from the results of the data analysis obtained.

3. RESULT AND DISCUSSION

3.1 Description of research results

From the company's financial report data will be analyzed using several financial ratios from two models that are considered to be able to predict the bankruptcy of a company. Based on the data from the calculation of the eight variables used in the Grover model and the Springate model, the next step is to enter these results into the equation model from Grover and Springate by multiplying the data results by the constant or standard value of each variable. The equations and calculation results based on the two modified models are:

1. Grover's Model

a. The results of Working Capital to Total Assets on bankruptcy prediction in food and beverage for the 2019-2021 period.

This ratio is used to measure liquidity by comparing net current assets to total assets. Net current assets or working capital are defined as total current assets minus total current liabilities if current assets are smaller than current liabilities, so that it can be interpreted that the company is unable to pay debts with all current assets owned and can be said to be current. WCTA Formulated as follows:

No.	Emiten Code	2019	2020	2021	Mean
1	ADES	0,450	0,377	0,311	0,379
2	AISA	-0,363	-0,080	-0,384	-0,276
3	ALTO	-0,021	-0,036	-0,039	-0,032
4	BTEK	0,079	-0,037	-0,047	-0,002
5	BUDI	0,006	0,126	0,063	0,065
6	CAMP	0,630	0,640	0,690	0,653
7	CEKA	0,607	0,635	0,633	0,625
8	CLEO	0,029	0,081	0,072	0,061
9	DLTA	0,794	0,781	0,711	0,762
10	DMND	0,292	0,486	0,454	0,411
11	FOOD	0,038	-0,090	-0,208	-0,086
12	HOKI	0,379	0,259	0,171	0,270
13	ICBP	0,260	0,111	0,128	0,166
14	IKAN	0,000	0,297	0,341	0,213
15	INDF	0,214	0,272	0,077	0,188
16	KEJU	0,447	0,449	0,418	0,438
17	MLBI	-0,147	-0,051	-0,151	-0,116
18	MYOR	0,476	0,473	0,371	0,440
19	PANI	0,330	0,440	0,142	0,304
20	PCAR	0,385	0,412	0,332	0,376
21	PSDN	-0,323	-0,301	-0,243	-0,289
22	ROTI	0,164	0,257	0,623	0,348
23	SKBM	0,248	0,265	0,237	0,250
24	SKLT	0,108	0,171	0,216	0,165
25	STTP	0,263	0,255	0,384	0,301
26	TBLA	0,145	0,136	0,147	0,143
27	ULTJ	0,436	0,373	0,444	0,418
MIN		-0,363	-0,301	-0,384	-0,289
MAX		0,794	0,781	0,711	0,762
AVERAGE		0,219	0,248	0,218	0,229

Source: processed author data

The WCTA table shows that throughout 2019 to 2021, the WCTA value of food and beverage manufacturing companies listed on the IDX tends to fluctuate, the company with the lowest WCTA value in 2019 to 2021 is PT. Prasidha Aneka Niaga Tbk. with the company code PSDN in 2019-2021 with an average value of -0.289. The condition of the company indicates that the company is unable to cover its current liabilities by using assets for its operational activities. The condition of the company is certainly different from the company PT. Delta Djakarta Tbk. the DLTA company code which has the largest WCTA value in the 2019-2021 period with an average value of 0.762 The condition of the company is that it is able to cover its current liabilities and can use the remaining assets for the company's operational activities.

b. Results of Earning Before Interest and Tax to Total Assets on bankruptcy prediction in food and beverage for the 2019-2021 period.

Earning Before Interest and Tax to Total Assets is used to measure a company's ability to generate profit before interest and taxes from the assets used. This ratio also measures actual productivity

No	Emiten Code	2019	2020	2021	Mean
1	ADES	0,134	0,175	0,129	0,146
2	AISA	0,730	0,501	0,010	0,414
3	ALTO	-0,010	-0,008	-0,007	-0,008
4	BTEK	-0,023	-0,148	-0,033	-0,068
5	BUDI	0,074	0,056	0,038	0,056
6	CAMP	0,094	0,052	0,110	0,085
7	CEKA	0,205	0,149	0,139	0,164
8	CLEO	0,139	0,129	0,171	0,146
9	DLTA	0,289	0,134	0,184	0,203
10	DMND	0,088	0,047	0,071	0,069
11	FOOD	0,026	-0,170	-0,135	-0,093
12	HOKI	0,168	0,056	0,018	0,081
13	ICBP	0,192	0,096	0,084	0,124
14	IKAN	0,069	-0,009	0,017	0,026
15	INDF	0,279	0,323	0,081	0,228
16	KEJU	0,205	0,233	0,239	0,226
17	MLBI	0,561	0,136	0,300	0,333
18	MYOR	0,142	0,136	0,078	0,119
19	PANI	-0,006	0,011	0,015	0,007
20	PCAR	-0,079	0,042	0,012	-0,008
21	PSDN	0,015	-0,117	-0,097	-0,067
22	ROTI	0,051	0,038	0,293	0,127
23	SKBM	0,006	0,014	0,038	0,019
24	SKLT	0,072	0,072	0,114	0,086
25	STTP	0,167	0,182	0,195	0,182
26	TBLA	0,052	0,046	0,049	0,049
27	ULTJ	0,208	0,157	0,208	0,191
MIN		-0,079	-0,170	-0,135	-0,093
MAX		0,730	0,501	0,300	0,414
AVERAGE		0,143	0,086	0,086	0,105

Source: processed author data

Based on the ratio table above, it can be seen that the value of EBITTA fluctuates in each company, some experience a continuous increase every year, some experience a decrease every year, and some experience ups and downs every year. The highest average EBITTA value is owned by PT. FKS Food Sejahtera Tbk, which is equal to 0.414 means that the company has a good turnover ratio and a good profit margin on sales, the company is able to get a return on assets, in other words the company is able to optimize its profit. While the smallest average value is owned by PT. Sentra Food Indonesia Tbk of -0.093 meaning that these companies have low turnover ratios and poor profit margins on sales, companies do not get a return on assets. In other words, companies in the food and beverage sector are less than optimal in their ability to generate profits.

c. Results Return on Assets to Total Assets for bankruptcy prediction in food and beverage for the 2019-2021 period.

ROA shows the company's ability to obtain net income from the total assets owned by the company. The greater the ROA, the more efficient the use of assets by the company and conversely the smaller the ROA, the more inefficient the use of assets by the company.

No	Emiten Code	2019	2020	2021	Mean
1	ADES	0.102	0.142	0.104	0.116
2	AISA	0.607	0.599	0.003	0.404
3	ALTO	-0.007	-0.095	-0.008	-0.037
4	BTEK	-0.017	-0.121	-0.026	-0.054
5	BUDI	0.056	0.054	0.031	0.047
6	CAMP	0.073	0.041	0.087	0.067
7	CEKA	0.155	0.116	0.110	0.127
8	CLEO	0.105	0.101	0.134	0.113
9	DLTA	0.223	0.101	0.144	0.156
10	DMND	0.066	0.036	0.006	0.036
11	FOOD	0.015	-0.154	-0.138	-0.092
12	HOKI	0.122	0.042	0.013	0.059
13	ICBP	0.138	0.072	0.067	0.092
14	IKAN	0.049	-0.008	0.017	0.018
15	INDF	0.188	0.228	0.062	0.159
16	KEJU	0.147	0.179	0.188	0.172
17	MLBI	0.416	0.098	0.023	0.179
18	MYOR	0.108	0.106	0.061	0.092
19	PANI	-0.013	0.003	0.010	0.000
20	PCAR	-0.082	-0.154	0.012	-0.075
21	PSDN	-0.090	-0.184	-0.113	-0.130
22	ROTI	0.051	0.038	0.219	0.103
23	SKBM	0.001	0.006	0.026	0.011
24	SKLT	0.057	0.055	0.095	0.069
25	STTP	0.167	0.182	0.158	0.169
26	TBLA	0.038	0.004	0.038	0.026
27	ULTJ	0.157	0.127	0.172	0.152
MIN		-0.090	-0.184	-0.138	-0.130
MAX		0.607	0.599	0.219	0.404
AVERAGE		0.105	0.060	0.055	0.073

Source: processed author data

Based on the table above, it can be seen that the ROA value fluctuates in each company. there are those that experience continuous increases every year, there are those that experience decreases every year, and there are also those that experience ups and downs every year.In 2019 the average ROA was 0.105 while the highest ROA was 0.607 owned by the company PT. FKS Food Sejahtera Tbk, and the lowest average ROA value in 2019 was -0.090 for PT. Prasidha Aneka Niaga Tbk. In 2019 companies in the food and beverage sector have positive ROA, which means that the company is effective and efficient in its operating activities in generating profits.

In 2020 the average ROA is 0.060. The highest ROA is 0.599 owned by PT. FKS Food Sejahtera Tbk, and the lowest average ROA value in 2020 is -0.184 for PT. Prasidha Aneka Niaga Tbk. In 2020 companies in the food and beverage sector have a negative ROA, which means that the company is not yet effective and efficient in its operating activities in generating profits. In 2021 the average ROA is 0.055. The highest ROA is 0.404 owned by PT. FKS Food Sejahtera Tbk, and the lowest average ROA value in 2021 is -0.130 for PT. Prasidha Aneka Niaga Tbk. In 2021 companies in the food and beverage sector will have a negative ROA, which means that companies are not yet effective and efficient in their operating activities in generating profits.

2. Springate Model

a. Results of Working Capital to Total Assetson bankruptcy prediction in food and beverage for the 2019-2021 period.

This ratio is used to measure liquidity by comparing net current assets to total assets. Net current assets or working capital are defined as total current assets minus total current liabilities if current assets are smaller than current liabilities, so that it can be interpreted that the company is unable to pay debts with all current assets owned and can be said to be current.

No	Emiten Code	2019	2020	2021	Mean
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2	AISA	-0,363	-0,080	-0,384	-0,276
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4	BTEK	0,079	-0,037	-0,047	-0,002
5	BUDI	0,006	0,126	0,003	0,065
6	CAMP	0,630	0,640	0,690	0,653
7	CEKA	0,607	0,635	0,633	0,625
8	CLEO	0,029	0,081	0,072	0,061
9	DLTA	0,794	0,781	0,711	0,762
10	DMND	0,292	0,486	0,454	0,411
11	FOOD	0,038	-0,090	-0,208	-0,086
12	HOKI	0,379	0,259	0,171	0,270
13	ICBP	0,280	0,111	0,128	0,166
14	IKAN	0,460	0,297	0,341	0,366
15	INDF	0,214	0,272	0,077	0,188
16	KEJU	0,447	0,449	0,418	0,438
17	MLBI	-0,147	-0,051	-0,151	-0,116
18	MYOR	0,476	0,473	0,371	0,440
19	PANI	0,330	0,440	0,142	0,304
20	PCAR	0,385	0,412	0,332	0,376
21	PSDN	-0,323	-0,301	-0,243	-0,289
22	ROTI	0,164	0,257	0,623	0,348
23	SKBM	0,248	0,265	0,257	0,250
24	SKLT	0,108	0,171	0,248	0,176
25	STTP	0,283	0,255	0,384	0,301
26	TBLA	0,145	0,136	0,147	0,143
27	ULTJ	0,438	0,373	0,444	0,418
MIN		-0,363	-0,301	-0,384	-0,349
MAX		0,794	0,781	0,711	0,762
AVARAGE		0,236	0,248	0,219	0,235

Source: processed author data

Based on the table above, it can be seen that the WCTA value fluctuates in each company. there are those that experience continuous increases every year, there are those that experience decreases every year, and there are also those that experience ups and downs every year. In 2019 the average WCTA was 0.236 while the highest WCTA was 0.794 owned by the company PT. Delta Djakarta Tbk, and the lowest average ROA value in 2019 was -0.363 for PT. FKS Food Sejahtera Tbk. In 2019 companies in the food and beverage sector had a positive WCTA, which means that the condition of the company is able to cover its current liabilities and can use the remaining assets for the company's operational activities. In 2020 the average WCTA is 0.236 while the highest WCTA is 0.781 owned by the company PT. Delta Djakarta Tbk, and the lowest average WCTA value in 2019 was -0.301 for PT. Prasidha Aneka Niaga Tbk. In 2020 companies in the food and beverage sector have negative WCTA, which means that the condition of the company is unable to cover its current liabilities and cannot use the remaining assets for company operational activities.

In 2021 the average WCTA is 0.219 while the highest WCTA is 0.711 owned by the company PT. Delta Djakarta Tbk, and the lowest average WCTA value in 2021 is -0.384 for PT. FKS Food Sejahtera Tbk. In 2021 companies in the food and beverage sector will have a negative WCTA, which means that the company's condition is unable to cover its current liabilities and cannot use the remaining assets for company operational activities.

b. results Earning Before Tax and Interest to Total Assets for bankruptcy prediction in food and beverage for the 2019-2021 period

Earning Before Interest and Tax to Total Assets are used to measure a company's ability to generate profit before interest and taxes from the assets used. This ratio also measures actual productivity.

No.	Emiten Code	2019	2020	2021	Mean
1	ADES	0,134	0,175	0,129	0,414
2	AISA	0,730	0,501	0,010	-0,008
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4	BTEK	-0,023	-0,148	-0,033	0,056
5	BUDI	0,074	0,056	0,038	0,085
6	CAMP	0,094	0,052	0,110	0,164
7	CEKA	0,205	0,149	0,139	0,146
8	CLEO	0,139	0,129	0,171	0,208
9	DLTA	0,289	0,134	0,181	0,059
10	DMND	0,088	0,047	0,071	-0,093
11	FOOD	0,026	-0,170	-0,135	0,081
12	HOKI	0,168	0,056	0,018	0,124
13	ICBP	0,192	0,095	0,081	0,020
14	IKAN	0,059	-0,009	0,000	0,228
15	INDF	0,279	0,323	0,081	0,226
16	KEJU	0,295	0,233	0,239	0,333
17	MLBI	0,561	0,136	0,300	0,119
18	MYOR	0,142	0,136	0,078	0,097
19	PANI	-0,006	0,011	0,015	-0,008
20	PCAR	-0,079	0,042	0,012	-0,097
21	PSDN	0,015	-0,117	-0,093	0,127
22	ROTI	0,051	0,038	0,293	0,019
23	SKBM	0,006	0,014	0,038	0,092
24	SKLT	0,072	0,072	0,131	0,182
25	STTP	0,167	0,182	0,195	0,049
26	TBLA	0,052	0,046	0,049	0,191
27	ULTJ	0,208	0,157	0,208	-0,128
MIN		-0,079	-0,170	-0,135	-0,128
MAX		0,730	0,501	0,300	0,414
AVERAGE		0,143	0,086	0,086	0,095

Source: processed author data

Based on the EBBITA table, it can be seen that the value of EBITTA fluctuates in each company, there are those that experience a continuous increase every year, some that experience a decrease every year, and some that experience ups and downs every year. The highest average EBITTA value is owned by PT. Akasha Wira International Tbk, which is equal to 0.414 means that the company has a good turnover ratio and a good profit margin on sales, the company is able to get a return on assets, in other words the company is able to optimize its profit. While the smallest average value is owned by PT. Ultrajaya Milk Industry & Trading Company Tbk of -0.128 meaning that these companies have low turnover ratios and poor profit margins on sales, companies do not get a return on assets. In other words, companies in the food and beverage sector are less than optimal in their ability to generate profits.

c. Results of Earning Before Tax to Current Liabilities on bankruptcy prediction in food and beverage the 2019-2021 period.

used to measure a company's ability to generate profit before tax from current liabilities. The higher the amount of profit before tax on current liabilities, the greater the ability to pay current liabilities

No.	Emiten Code	2019	2020	2021	Mean
1	ADES	0,479	0,740	0,306	0,575
2	AISA	0,984	1,409	0,012	0,802
3	ALTO	-0,037	-0,041	-0,038	-0,040
4	BTEK	-0,161	-1,567	-0,345	-0,691
5	BUDI	0,056	0,062	0,081	0,066
6	CAMP	1,340	0,777	1,555	1,224
7	CEKA	0,989	0,669	0,661	0,788
8	CLEO	0,638	0,900	0,988	0,842
9	DLTA	1,979	0,839	0,770	1,196
10	DMND	0,174	0,250	0,032	0,152
11	FOOD	0,052	-0,433	-0,291	-0,224
12	HOKI	0,641	0,202	0,045	0,296
13	ICBP	0,818	0,808	0,418	0,681
14	IKAN	0,077	-0,018	0,028	0,029
15	INDF	0,239	0,313	0,277	0,276
16	KEJU	0,487	0,613	0,819	0,640
17	MLBI	0,759	0,213	0,040	0,337
18	MYOR	0,552	0,604	0,217	0,458
19	PANI	-0,020	0,006	0,015	0,000
20	PCAR	-0,310	-0,738	0,045	-0,334
21	PSDN	-0,008	-0,142	-0,200	-0,137
22	ROTI	0,214	0,417	0,382	0,404
23	SKBM	0,001	0,008	0,034	0,014
24	SKLT	0,153	0,172	0,350	0,225
25	STTP	1,181	1,004	1,299	1,162
26	TBLA	0,164	0,013	0,128	0,101
27	ULTJ	1,239	0,477	0,820	0,845
MIN		-0,310	-1,567	-0,345	-0,691
MAX		1,979	1,409	1,555	1,224
AVERAGE		0,467	0,280	0,328	0,358

Source: processed author data

The table above shows that throughout 2019 to 2021, the EBTCL value of food and beverage companies listed on the IDX tends to fluctuate, the company with the lowest EBTCL value in

2019 to 2021 is PT. Bumi Teknoculture Unggul Tbk is -0.691, the condition of the company indicates that the low level of profit before tax ratio against current liabilities indicates that there are relatively high operating costs borne by the company which exceed the profits generated. If operating costs are higher than the profit generated, it is likely that the company will be in a difficult condition. the condition of the company is different from PT. Campina Ice Cream Industry Tbk, which has the largest EBTCL in the 2019-2021 period of 1.224, which means that the company has relatively low operating costs and relatively high profits.

d. results Sales to Total Assets for bankruptcy prediction in food and beverage companies for the 2019-2021 period.

This ratio is used to measure the company's ability to use total assets to generate sales by comparing sales with the company's total assets

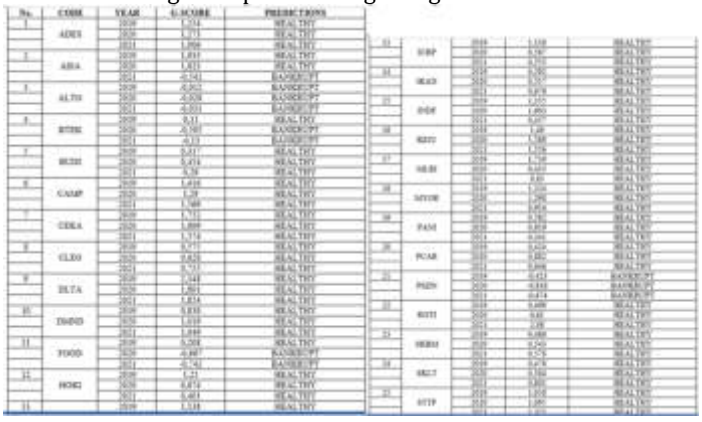
No.	Emiten Code	2019	2020	2021	Mean
1	ADES	0.930	0,702	0,717	0,511
2	AISA	0,808	0,658	0,086	0,313
3	ALTO	0,312	0,291	0,337	0,138
4	BTEK	0,140	0,240	0,035	1,985
5	BUDI	2,633	2,196	1,127	0,914
6	CAMP	0,973	0,880	0,888	2,573
7	CEKA	2,240	2,320	3,157	0,811
8	CLEO	0,871	0,742	0,819	0,515
9	DLTA	0,580	0,446	0,521	1,141
10	DMND	1,241	1,076	1,107	0,920
11	FOOD	1,065	0,835	0,860	1,395
12	HOKI	1,948	1,294	0,944	0,675
13	ICBP	1,093	0,450	0,481	0,882
14	IKAN	1,144	0,639	0,863	1,707
15	INDF	2,439	2,127	0,554	1,387
16	KEJU	1,469	1,355	1,358	0,937
17	MLBI	1,281	0,683	0,847	1,318
18	MYOR	1,315	1,258	1,401	2,242
19	PANI	2,511	2,491	1,725	0,813
20	PCAR	0,503	0,451	1,485	2,889
21	PSDN	4,285	3,156	1,225	1,333
22	ROTI	0,713	0,721	2,564	3,002
23	SKBM	2,366	3,319	3,322	1,664
24	SKLT	1,620	1,620	1,753	1,139
25	STTP	1,219	1,115	1,082	0,603
26	TBLA	0,491	0,559	0,758	0,839
27	ULTJ	0,942	0,682	0,893	0,138
MIN		0,140	0,240	0,035	0,138
MAX		4,285	3,319	3,322	3,002
AVERAGE		1,375	1,194	1,145	1,214

Source: processed author data

Table STA shows that throughout 2019 to 2021, the STA value of food and beverage companies listed on the IDX tends to decrease but is able to generate sales from the total assets owned, the company with the lowest STA value in 2019 to 2021 is PT. UltraJaya Tbk of 0.138, the condition of the company shows that the condition of the company is not able to generate sales with the total assets it owns. In contrast to companies that have consistency every year, such as PT. Nippon Indosari Corpindo Tbk which has the highest STA of 3,002.

3.2 Discussion

Bankruptcy of food and beverage companies using the grover model :



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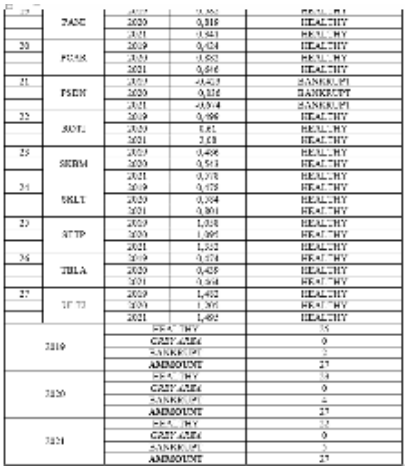
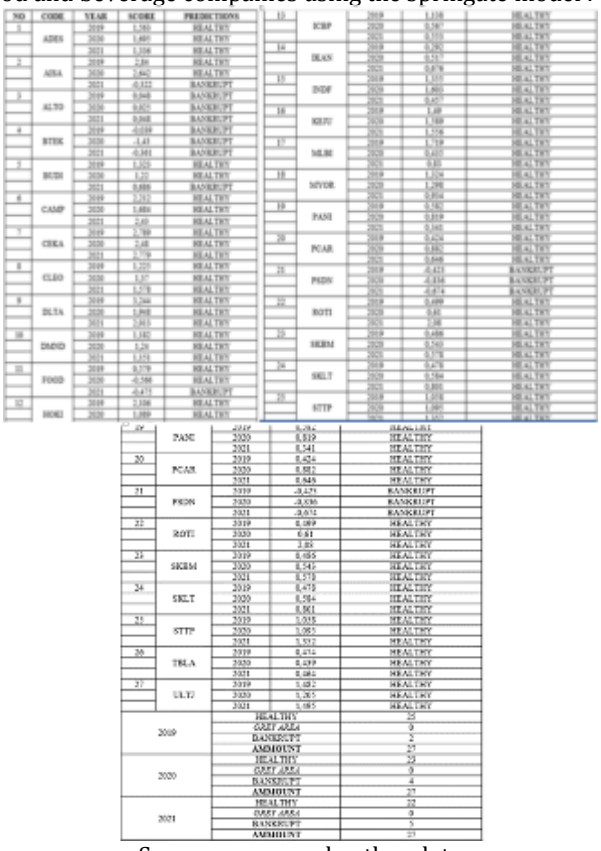


Source: processed author data

Based on the table above, it shows the calculations using the Grover Model in 2019, there are two companies that are experiencing bankruptcy, namely PT. Prasidha Aneka Niaga, Tbk PT. Banyan Tirta Tbk, while twenty five other companies are healthy companies. Furthermore, in 2020, there are four companies that are experiencing bankruptcy, namely PT. Prasidha Aneka Niaga Tbk, PT. Sentra Food Indonesia Tbk, PT. Superior Technoculture Earth Tbk, PT. Banyan Tirta Tbk, while the other twenty three companies are healthy companies. Then in 2021, there are five companies and two companies that are experiencing bankruptcy, namely PT. FKS Food Sejahtera Tbk, namely PT. Prasidha Aneka Niaga Tbk, PT. Sentra Food Indonesia Tbk, PT. Superior Technoculture Earth Tbk, PT. Banyan Tirta Tbk, while the other twenty two companies are healthy companies.

bankruptcy of food and beverage companies using the springate model :



Source: processed author data

Based on table 4.1, it shows calculations using the Springate Model in 2019, there are seven companies that are experiencing bankruptcy, namely PT. New Tunas Lampung Tbk, PT. Nippon Indosari Corpindo Tbk, PT. Prima Cakrawala Abadi Tbk, PT. Era Mandiri Cemerlang Tbk, PT. Sentra Food Indonesia Tbk , PT. Superior Technoculture Earth Tbk, PT. Banyan Tirta Tbk while the other twenty three companies are healthy companies. Furthermore, in 2020, there are eight companies that are experiencing bankruptcy, namely PT. New Tunas Lampung Tbk, PT. Nippon Indosari Corpindo Tbk, PT. Prima Cakrawala Abadi Tbk, PT. Era Mandiri Cemerlang Tbk, PT. Sentra Food Indonesia Tbk , PT. Superior Technoculture Earth Tbk, PT. Banyan Tirta Tbk, PT. Multi Bintang Indonesia Tbk . PT. Prasidha Aneka Niaga Tbk. Furthermore, in 2020 there is one company in the Gray Area category or prone to bankruptcy, namely PT. Nippon Indosari Corpindo Tbk. , while the other eighteen companies are healthy companies. Furthermore, in 2021, there are nine companies that are experiencing bankruptcy, namely PT. New Tunas Lampung Tbk, PT. Prasidha Aneka Niaga Tbk, PT. Indofood Sukses Makmur Tbk, PT. Era Mandiri Cemerlang Tbk, PT. Indofood CBP Sukses Makmur Tbk, PT. Buyung Poetra Sembada Tbk, PT. Sentra Food Indonesia Tbk, PT. Budi Starch and Sweetener Tbk, PT. Superior Technoculture Earth Tbk, PT. Banyan Tirta Tbk, PT. FKS Food Sejahtera Tbk. Furthermore, in 2021 there will be one company in the Gray Area category or prone to bankruptcy, namely PT. Pratama Abadi Nusa Industri Tbk. while the other fifteen companies are healthy companies.

4. CONCLUSION

Based on the results of financial distress prediction calculations using the Grover Model, there are thirteen food and beverage listed on the Indonesia Stock Exchange (IDX) during the 2019-2021 period which are indicated to be experiencing bankruptcy and fourteen other food and beverage analyzed have not experienced bankruptcy. Based on the results of financial distress prediction calculations using the Springate Model, there were fourteen food and beverage listed on the Indonesia Stock Exchange (IDX) during the 2019-2021 period which indicated bankruptcy and thirteen other food and beverage analyzed did not experience bankruptcy.

Viewed based on the sensitivity level of financial distress, the Springate mesthod has a higher sensitivity level than the Grover method, because based on the calculations the Springate method can predict 13 companies that have the potential to experience financial distress while the Grover method calculations can predict 5 companies that have the potential to experience financial distress.

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