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## Analysis of Measurement of Financial Difficulties and Financial Report Fraud (A Case Study at PT ASABRI (Persero) 2010-2018)

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### ABSTRACT

This study aims to examine the financial health condition and whether there is an indication of fraudulent financial statements or not at PT ASABRI (Social Insurance for the Armed Forces of the Republic) in 2010-2018 by using the Altman Z-Score, Springate S-Score, Grover G-Score, Beneish M-Score, and Dechow F-Score methods. PT ASABRI became the object of the study due to the result of an audit conducted by the BPK (The Audit Board of the Republic of Indonesia) in 2021 that found fraud in financial management and investment funds at PT ASABRI. To measure financial distress, the researchers used the Altman, Springate, and Grover models. While to examine financial statement fraud, the researchers used the Beneish and Dechow models. The results revealed that each model showed varied results. In the financial distress model, the Altman Z-Score could show financial distress 4 times while the Springate S-Score showed financial distress 5 times in 9 years of observation. Moreover, the other models showed different results. The Grover G-Score model did not indicate any financial distress at PT ASABRI. While in the fraud model, the Beneish M-Score could detect indications of fraudulent statements at PT ASABRI 5 times in 8 years of observation. Different conditions occurred in the Dechow F-Score model that did not show fraudulent financial statements at PT ASABRI in 9 years of observation, from 2010 to 2018.

**Keywords:** corruption; financial distress; financial statement fraud; insurance

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## INTRODUCTION

Nowadays, Indonesian citizens are starting to be aware of the significance of insurance in protecting health, life, property, and others. Insurance has functions to protect individuals from the risk of uncertainty and give them self-confidence. By using insurance, individuals will receive guarantees. To avoid unwanted risks, many people choose to become customers of insurance institutions. The Indonesian Life Insurance Association (*Asosiasi Asuransi Jiwa Indonesia/AAJI*) reported that 63.87 million Indonesians had life insurance in the first quarter of 2021 (Kontan, 2021b). It is followed by the growth of the insurance industry in Indonesia. Based on the data from the Central Bureau of Statistics, there were 228 insurance companies and insurance support companies in Indonesia in 2020.

The relationship between insurance companies and their customer sometimes encounters issues that lead to disagreements. These disagreements can result from varied factors, such as customer and insurance company misunderstandings about financial services (Fauzi, 2019). Because of these misunderstandings, customers cannot accept insurance claims from insurance companies. Aside from the customer, the issues can likewise emerge from the insurance company side that is involved. The company's poor financial management is one of the issues, and it has the potential to default on the policy. It can occur when the company suffers losses that leave it without enough assets to fulfil insurance customer policies (Trivena, 2020). The investments made by insurance companies could be to blame for those losses.

PT ASABRI is a State-Owned Enterprise that functions to manage social insurance programs for members of the Indonesian National Police (POLRI), the Indonesian National Armed Forces (TNI) soldiers, and State Civil Apparatus, including Government Employees with Work Agreements (*Pegawai Pemerintah dengan Perjanjian Kerja/PPPK*) and Civil Servants within the Ministry of Defense and POLRI (PT ASABRI, 2021). Since its inception in 1971, PT ASABRI has received numerous awards. One of them is becoming the 2019's TOP Compulsory/Social Insurance Company. Sonny Widjaja, President Director of PT ASABRI has also received the TOP Insurance CEO of 2019 award from Top Bank, Insurance, and Multi-Finance 2019 (PT ASABRI, 2019). However, surprisingly, the company that received the Best Strategic Brand Award at the 2018 BUMN Branding & Marketing Award from BUMN Track was hit by a corruption case in 2020. According to the findings of an audit carried out in 2021 by the Audit Board of the Republic of Indonesia, this case resulted in state losses of IDR 22.78 trillion (BPK RI, 2021).

According to the BPK RI audit results, there were irregularities in the cultivation of investment and financial funds at PT ASABRI between 2012 and 2019 in the form of controlling the placement of investment funds in the form of shares and mutual funds with multiple company owners or shareholders (BPK RI, 2021). According to data from Stockbit, PT ASABRI owns 17 company shares. According to Thertina (2020), the majority of these stock prices decreased by 50% to 90%. Since this company's investment is regarded as high-risk and illiquid, it is not profitable.

The primary source of income for insurance companies is premium revenue (Triana, 2020). Insurance companies also earn money from investment returns and other income, in addition to paying premiums. PT ASABRI itself generates income from premium payments, investment returns, and other sources, as indicated by data from its financial statements. Throughout the study period,

investment returns always account for more than half of total income. This indicates that PT ASABRI relies heavily on investment as a component.

Every business will do everything possible to make a profit. Nevertheless, it cannot be denied that a business can fail and experience financial distress. Financial distress begins when a business fails to fulfil its obligations or when its cash situation indicates that it cannot immediately pay off its debts (Rahmawati et al., 2021). A company's financial distress is the first stage of bankruptcy if this is not anticipated early on (Putri, 2021). Management must pay attention and regularly use financial indicators to analyse financial statements.

The Altman Z-Score and Springate S-Score methods can be used to analyse financial distress to determine whether a company is in good health or not (Imran et al., 2021). The Altman, Springate, and Grover models can be used to predict financial distress and provide an early indication of a company's bankruptcy (Kukreja et al., 2020). Management of the company can use the findings of this analysis to decide on policies and next steps. According to Husein & Pambekti (2014), businesses must conduct internal and managerial analyses of financial distress as well as for business owners to anticipate the occurrence of financial distress. According to Aviantara (2021), the Altman model, along with two other models, produces a strong sign of financial distress at PT Garuda Indonesia Tbk. The same sign appears in each model 14 times between 2007 and 2018. Laksmana & Darmawati (2019) demonstrate that the Springate Model accurately predicted PT Citra Maharlika Nusantara Corpora Tbk's bankruptcy. This model demonstrates that PT Citra Maharlika Nusantara Corpora Tbk was declared bankrupt between June 2013 and September 2016. Munawarah et al. (2019) conducted research to demonstrate that the Grover G-Score has an IDX financial distress determination accuracy of 97% for trade and service businesses. According to this model, only one trade and service company on the IDX was categorized as unhealthy between 2013 and 2017, while 33 others were categorized as healthy.

PT ASABRI's 2018 Financial Statement received a disclaimer of opinion from KAP Tanudiredja, Wibisana, and Rintis & Partners in addition to the corruption case involving the board of directors. If the auditor believes that there is a material deviation from accounting principles, a disclaimer of opinion may be issued (Setiyanti, 2012). This motivates researchers to investigate the company's detection of financial statement fraud. Financial statement fraud, according to the Association of Certified Fraud Examiners (ACFE), is the deliberate misrepresentation or omission of disclosure amounts in financial statements to deceive financial statement users (Ratmono et al., 2020). The Beneish M-Score and the Dechow F-Score are two models that can be used to identify fraud statement. Research conducted by Kukreja et al. (2020) on Comscore Inc. showed The Beneish M-Score's ability to accurately detect the possibility of financial statement manipulation. In 2016, Comscore obtained an M-Score of more than -2.22, indicating that financial statement fraud was possible. Study of Meiryani et al. (2021) for manufacturing companies that are listed on the IDX, showed that 6% of the sample companies have a very high risk of fraudulent financial statements, 4% of the sample companies have a high risk of fraudulent financial statements, 2% of the sample companies have a risk of fraudulent financial statements that is above the normal level, and 88% of the sample companies have a risk of fraudulent financial statements that is normal or below the normal level.

The purpose of this study is to investigate the conditions under which the company can identify financial statement issues and fraud. To get an in-depth analysis of the conditions at PT ASABRI, the research was conducted qualitatively. The object of the study was PT ASABRI (Persero).

The mega-scandal PT ASABRI (Persero), which was a corruption case with the largest total state loss at the time, was heating up, so researchers took this case. Based on the BPK RI audit, the fraud committed by PT ASABRI occurred between 2012 and 2019 (BPK RI, 2021). As a result, the period used is 2010-2018. This research is expected to contribute to expanding the literature on measuring financial distress and financial statement fraud.

## RESEARCH METHODS

### Object of the Study

As the insurance company, PT ASABRI has a job to manage social insurance programs for the Indonesian National Police (POLRI), the Indonesian Armed Forces soldiers (TNI), and some State Civil Apparatus (*Aparatur Sipil Negara/ASN*) employees, which is the subject of this study. The result of an audit that was done by the BPK in 2021 revealed that there were irregularities in the cultivation of investment and financial funds at PT ASABRI from 2012 to 2019 in the form of controlling the placement of investment funds with multiple company owners or shareholders in the form of shares and mutual funds. The researcher chose this company because of these findings (BPK RI, 2021). The observation periods were from 2010 to 2018 because the researchers wanted to know the trends of the companies' performances during that period which includes suspected cases of fraud in financial management and investment funds.

### Sources of Data

The data used in this study is secondary data, in the form of PT ASABRI (Persero)'s 2010-2018 Financial Statements and Annual Reports. To collect the data, the researchers used documentation that was by collecting the documents needed in this study, namely the Financial Statements and Annual Reports of PT ASABRI. The data were obtained from the official website of PT ASABRI located at [www.asabri.co.id](http://www.asabri.co.id).

### Method of Analysis

The researcher used a case study to get an in-depth analysis of the company's case. To measure financial distress and financial statement fraud in this case each model was used, namely:

### Financial Distress Analysis

The financial distress analysis model is a tool used to predict the financial condition of an entity or company by estimating the possibility of financial distress using a combination of company financial ratios (Aminian et al., 2016). Analysis of financial distress at PT ASABRI was carried out using the Altman Z-Score, Springate S-Score, and Grover G-Score models. These models are the development of each previous model.

### Altman Z-Scores e

This research used Altman Z-Score Modification by using following similarity:

$$Z \text{ Score} = (6,56X1) + (3,26X2) + (6,72X3) + (1,05X4)$$

**Description:**

X1: Working Capital/Total Assets. This ratio measures a company's ability to generate net working capital from its total assets; X2 = Retained Earnings/Total Assets. This ratio measures the profit that a company can get from reinvesting the company's retained earnings; X3 = Profit Before Interest and Tax/Total Assets. This ratio shows the actual return of a company that comes from company assets before deducting interest and taxes; X4 = Total Equity/Total Debt. This ratio shows how much the company's assets value decreases before the liabilities exceed the company's asset value which can cause the company to be depressed. A score <1.1 indicates a company with the potential to go bankrupt, a score from 1.1 to 2.6 is classified as a grey zone, and a score > 2.6 is classified as a safe zone.

**Springate S-Score**

The Springate S-Score is an extension of the Z-Score model which also uses Multiple Discriminate Analysis (MDA). The Springate model similarity is as follows:

$$S \text{ Score} = (1,03X1) + (3,07X2) + (0,66X3) + (0,4X4)$$

**Description:**

X1 = Working Capital/Total Assets. This ratio measures a company's ability to generate net working capital from its total assets; X2 = Profit Before Interest and Tax/Total Assets. This ratio shows the actual return of a company that comes from company assets before deducting interest and taxes; X3 = Profit Before Tax/Short Term Liabilities. This ratio is used to measure a company's ability to pay off its short-term debt; X4 = Sales/Total Assets. This ratio can show the level of efficiency in using company assets in generating sales volume. If the S-score > 0.862, the company is in good health, otherwise, if the S-score is < 0.862, the company has the potential to experience financial distress.

**Grover G-Score**

The Grover G-Score model is the result of a redesign and reassessment of the Altman Z-score model. The calculation is as follows:

$$G \text{ Score} = (1,65X1) + (3,404X2) + 0,16ROA + 0,057$$

**Description:**

X1 = Working Capital/Total Assets. This ratio measures a company's ability to generate net working capital from its total assets; X2 = Profit Before Interest and Tax/Total Assets. This ratio is used to measure a company's ability to generate profits; ROA = Net Profit/Total Assets. ROA measures the overall profitability of an asset in terms of the income earned from the asset. If the G-score > 0.01, then the company is in good health, and if the G-score < -0.02, the company has the potential to experience financial distress.

## Analysis of Financial Fraud Statement

Analysis of financial statement fraud at PT ASABRI was carried out using the Beneish M-Score and Dechow F-Score models.

### Beneish M-Score

The Beneish M-Score focuses on estimating the extent of earnings manipulation. The Beneish M-Score model similarity is as follows:

$$M \text{ Score} = -4,84 + 0,92DSRI + 0,528GMI + 0,404AQI + 0,892SGI + 0,115DEPI - 0,172SGAI$$

Table 1. Description of M-Score

Variable	Calculation	Description
Day's sales receivable index (DSRI)	$(Receivables_t/Sales_t)/(Receivables_{t-1}/Sales_{t-1})$	The DSRI ratio is used to calculate deviations in accounts receivable that can result from income inflation.
Gross Margin Index (GMI)	$Gross\ Margin_{t-1}/Gross\ Margin_t$ <ul style="list-style-type: none"> <li><math>Gross\ Margin = 1 - Cost\ of\ Revenue/Sales</math></li> </ul>	The GMI ratio explains that deteriorating margins affect companies to manipulate earnings.
Asset Quality Index (AQI)	$[1-(PPE_t+CA_t)/TA_t]/[1-(PPE_{t-1}+CA_{t-1})/TA_{t-1}]$ <ul style="list-style-type: none"> <li>PPE = Plants, Properties, and Equipments</li> <li>CA = Current Assets</li> <li>TA = Total Assets</li> </ul>	The AQI ratio can be used to calculate deviations in other assets that can occur when expenses are over budget.
Sales Growth Index (SGI)	$Sales_t/Sales_{t-1}$	The SGI ratio explains that sustainable growth and capital requirements influence company growth to manipulate sales and earnings.
Depreciation Index (DEPI)	$Depreciation\ Rate_{t-1}/Depreciation\ Rate_t$ <ul style="list-style-type: none"> <li><math>Depreciation\ Rate = Depreciation/(Depreciation + PPE)</math></li> </ul>	The DEPI ratio is used to calculate the decrease in the depreciation rate as a form of income manipulation.
Sales and General Administration Expenses Index (SGAI)	$(SGA_t/Sales_t)/(SGA_{t-1}/Sales_{t-1})$	The SGAI ratio explains that a decrease in administrative and marketing efficiency affects companies to manipulate earnings.
Accruals	$(Income\ before\ extraordinary\ items - Cash\ from\ operations)/Total\ Assets_t$	The Accruals Ratio explains that accounting profits are not supported by cash profits.
Leverage Index (LEVI)	$Leverage_t/Leverage_{t-1}$ <ul style="list-style-type: none"> <li><math>Leverage = (Current\ Liabilities + Total\ Long-Term\ Debt)/Total\ Assets</math></li> </ul>	The LEVI ratio explains that an increase in leverage tightens debt limits and influences companies to manipulate earnings.

Source: Aviantara (2021)



If the result of M-Score is higher than -2,22, the company most likely manipulated the accounting data.

### Dechow F-Score

The Dechow F-Score is a fraud risk assessment tool, an earnings management indication of the likelihood of financial statement fraud. The Dechow F-Score model similarity is as follows:

$$F \text{ Score} = \frac{\text{Probability Value}}{\text{Unconditional Probability}}$$

By:

1.  $\text{Unconditional Probability} = 0,0037$
2.  $\text{Probability Value} = e^{(\text{Predicted Value})} / (1 + e^{(\text{Predicted Value})})$
3.  $e = 2,71828183$
4.  $\text{Predicted Value} = -7,893 + 0,79\text{RSST} + 2,518\Delta\text{REC} + 1,191\Delta\text{INV} + 1,979\text{SOFTASSETS} + 0,171\Delta\text{CASHSALES} - 0,932\Delta\text{ROA} + 1,029\text{ISSUE}$

Description:

Table 2. Description of F-Score

Variable	Abbreviation	Calculation
RSST accruals	RSST	$(\Delta\text{WC} + \Delta\text{NCO} + \Delta\text{FIN}) / \text{Average Total Assets}$ <ul style="list-style-type: none"> <li>• <math>\Delta\text{WC}</math> (working capital) = [Current Assets – Cash and Short-term Investments] – [Current Liabilities – Debt in Current Liabilities]</li> <li>• <math>\Delta\text{NCO}</math> (non current operating) = [Total Assets – Current Assets – Investments and Advances] – [Total Liabilities – Current Liabilities – Long-term Debt]</li> <li>• <math>\Delta\text{FIN}</math> (financial accrual) = [Short-term Investments + Long-term Investments] – [Long-term Debt + Debt in Current Liabilities + Preferred Stock]</li> </ul>
Account Receivable Changes	$\Delta\text{REC}$	$\Delta\text{Accounts Receivables} / \text{Average Total Assets}$
Inventory Changes	$\Delta\text{INV}$	$\Delta\text{Inventories} / \text{Average Total Assets}$
Soft Assets Percentage	SOFTASSETS	$(\text{Total Assets} - \text{PPE} - \text{Cash and Cash Equivalent}) / \text{Total Assets}$
Cash Sles Changes Perubahan	$\Delta\text{CASHSALES}$	$(\text{Sales}_t - \Delta\text{Account Receivables}_t) / (\text{Sales}_{t-1} - \Delta\text{Account Receivables}_{t-1})$
ROA Changes	$\Delta\text{ROA}$	$[\text{Earnings}_t / \text{Average Total Assets}_t] - [\text{Earnings}_{t-1} / \text{Average Total Assets}_{t-1}]$
Securities Issuance	ISSUE	Given a value of 1 if the company issued securities during year t, and given a value of 0 if the company does not issue securities during year t

Source: Aviantara (2021)

If **F-score** > 1,00, so there is indication that the company did the financial statement fraud.

## RESULTS AND DISCUSSION

### Descriptive Statistics of Financial Ratio

The financial ratios used in each of the financial distress models and the financial statement fraud models are described in Table 3. The researcher used the codes "Z" for the Z-Score, "S" for the S-Score, and "G" for the G-Score in the table. The company has a good average X1 (Working Capital/Total Assets) ratio of 0.2468, as shown in Table 3. It indicates that the company's ability to generate working capital from total assets is considered quite good. This working capital can be used by the company to pay insurance claims in the short term.

However, the Altman Z-Score model indicates that the company has a ratio of X4 (Total Equity/Total Debt), with an average value of 0.1192. As a result, the company's financial situation reflects a higher debt-to-equity ratio. Additionally, the company has an average ratio of X2 on the Z-Score (Retained Earnings/Total Assets) and X2 on the relatively low S-Score and G-Score (Earnings Before Interest and Tax/Total Assets) of 0.0252 and 0.0173. This indicates that the company as a whole has difficulty generating earnings before interest and taxes from its assets in the form of retained earnings. The Springate S-Score's ratios X3 (Profit Before Tax/Short Term Liabilities) and X4 (Sales/Total Assets) exhibit distinct conditions. The company has an acceptable average value of 1.1821 in X3 and 0.1567 in X4 at this ratio. This demonstrates the company's ability to pay off its short-term debt and use its assets effectively to boost sales volume. The situation at PT ASABRI, in which the business invests in financial assets for the benefit of specific parties, is confirmed by this ratio. Whereas investment activities account for the majority of an insurance company's profits.

Table 3. Descriptive statistics of financial ratio

Ratio	N	Minimum	Maximum	Mean	SD
X1 (Z, S, G)	9	0,0067	0,6900	0,2468	0,2727
X2 (Z)	9	0,0071	0,0531	0,0252	0,0160
X2 (S, G) dan X3 (Z)	9	0,0072	0,0356	0,0173	0,0085
X4 (Z)	9	0,0272	0,2152	0,1192	0,0780
X3 (S)	9	0,2017	6,4521	1,1821	2,0236
X4 (S)	9	0,0872	0,1963	0,1567	0,0431
ROA	9	0,0071	0,0356	0,0171	0,0085
DSRI	8	0,2134	4,5879	1,5198	1,5675
GMI	8	0,3639	2,3555	0,9979	0,6261
AQI	8	0,3179	1,5601	0,9584	0,3409
SGI	8	0,8721	1,9599	1,2032	0,3253
DEPI	8	0,9835	4,1322	1,4743	1,0795
SGAI	8	0,7306	1,3600	1,0930	0,2032
Accruals	8	-0,0484	0,0325	-0,0022	0,0231
LEVI	8	0,9636	1,0869	1,0173	0,0436
RSST	9	-0,8506	-0,2953	-0,4796	0,1838
ΔREC	9	-0,0422	0,1069	0,0141	0,0409
ΔINV	9	0,0000	0,0000	0,0000	0,0000
SOFTASSETS	9	0,9601	0,9906	0,9841	0,0092
ΔCASHSALES	9	0,5837	3,6917	1,3140	0,9716
ΔROA	9	-0,0283	0,0157	-0,0014	0,0132



ISSUE	9	0,0000	0,0000	0,0000	0,0000
Desc: X1: Working Capital/Total Asset; X2 (Z): Retained Earnings/Total Asset; X2 (S, G) and X3 (Z): Earnings Before Interest and Tax Payment/Total Asset; X4 (Z): Total Equity/Total Liabilities; X3 (S): Earnings Before Tax/Short Term Liabilities; X4 (S): Sale/Total Asset; ROA: Net Income/Total Asset; DSRI: $(Receivables_t/Sales_t)/(Receivables_{t-1}/Sales_{t-1})$ ; GMI: $Gross\ Margin_t/Gross\ Margin_{t-1}$ ; AQI: $[1-(PPE_t+CA_t)/TA_t]/[1-(PPE_{t-1}+CA_{t-1})/TA_{t-1}]$ ; SGI: $Sales_t/Sales_{t-1}$ ; DEPI: $Depreciation\ Rate_{t-1}/Depreciation\ Rate_t$ ; SGAI: $(SGA_t/Sales_t)/(SGA_{t-1}/Sales_{t-1})$ ; Accruals: $(Income\ before\ extraordinary\ items - Cash\ from\ operations)/Total\ Assets_t$ ; LEVI: $Leverage_t/Leverage_{t-1}$ ; RSST: $(\Delta WWC+\Delta NCO+\Delta FIN)/Average\ Total\ Assets$ ; $\Delta REC$ : $\Delta Accounts\ Receivables/Average\ Total\ Assets$ ; $\Delta INV$ : $\Delta Inventories/Average\ Total\ Assets$ ; SOFTASSETS: $(Total\ Assets - PPE - Cash\ and\ Cash\ Equivalent)/Total\ Assets$ ; $\Delta CASHSALES$ : $(Sales_t - \Delta Account\ Receivables_t)/(Sales_{t-1} - \Delta Account\ Receivables_{t-1})$ ; $\Delta ROA$ : $[Earnings_t/Average\ Total\ Assets_t] - [Earnings_{t-1}/Average\ Total\ Assets_{t-1}]$ ; ISSUE: Given a value of 1 if the company issued securities during year t, and given a value of 0 if the company does not issue securities during year t.					

Days sales receivables index or DSRI ratio has an average value of 1.5198. This demonstrates the way that PT ASABRI can gather its receivables appropriately. An increase in the company's capacity to collect its receivables is indicated by a higher DSRI value. The DEPI (depreciation index) ratio has an average value of 1.4743. The company saw a significant decrease in the depreciation rate in 2015, which contributed to the magnitude of this value. The Accruals ratio, which has varying conditions and an average negative value of -0.0022, is negative. This depicts PT.'s operating cash flow. ASABRI's extraordinary products surpass the profit before them. The Asset Quality Index (AQI) ratio typically has a value of 0.9584. This suggests that the current assets and fixed assets of PT ASABRI as a whole increased in value. A decrease in the quality of the company's assets is indicated by the AQI ratio's higher value. The average value of the GMI (Gross Margin Index) ratio is 0.9979. The fact that the gross margin for the current year is only marginally higher than the gross margin for the previous year, suggests that the business has unfavourable prospects for profit.

The average value of 1.3140 for the  $\Delta CASHSALES$  (Change in Cash Sales) ratio is quite high. It occurred in 2015, with a ratio value of 3.6917, and became one of the years with a high ratio value. This indicates that the company's cash income significantly increased in 2015 compared to 2014. The RSST ratio, which has varied conditions and an average negative value of -0.4769, is negative. This is because the company has more short-term investments and cash than its current assets have value. The change in inventories, or  $\Delta INV$ , has an average value of -0.000005. This indicates the increase in PT ASABRI's inventory is very low when compared to the average value of its total assets and the value of its inventory always decreases every year. Inventories owned by PT ASABRI consists of printed materials, office stationery, and medicines. PT ASABRI has an average  $\Delta ROA$  (Percentage Change in ROA) value of -0.0014. This negative value indicates that the company's ability to generate profit from its total assets as a whole has decreased. In addition, the average value of the ISSUE ratio is 0. This is because, during the year of observation, the company never issued securities such as stocks, bonds, deposits, and so on.

## Financial Distress Analysis

The bankruptcy prediction model is a tool for anticipating and early warning of financial distress because the model can be used as a means to identify and even improve conditions before a crisis or bankruptcy. Additionally, financial statements can be used as a basis for measuring a company's financial distress through analysis of financial statements using existing financial ratios (Husein & Pambekti, 2014). Analysis of financial distress at PT ASABRI was carried out by incorporating the coefficients of the company's financial statements related to indications of financial distress into the three models used for analysis, namely the Altman Z-Score, Springate S-Score, and Grover G-Score models with the calculation results as follows:

Table 4. Financial distress score

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018
Z-Score	0,8331	0,3848	0,4412	0,2327	1,8068	1,2739	4,7464	3,7877	3,981
Description	<i>Distress</i>	<i>Distress</i>	<i>Distress</i>	<i>Distress</i>	<i>Grey Area</i>	<i>Grey Area</i>	Healthy	Healthy	Healthy
S-Score	4,4788	0,4511	1,1419	0,2578	0,9572	0,3876	0,9952	0,8408	0,8422
Description	Healthy	<i>Distress</i>	Healthy	<i>Distress</i>	Healthy	<i>Distress</i>	Healthy	<i>Distress</i>	<i>Distress</i>
G-Score	0,2109	0,0997	0,1167	0,0877	0,4794	0,3586	1,2384	0,9949	1,0215
Description	Healthy	Healthy	Healthy	Healthy	Healthy	Healthy	Healthy	Healthy	Healthy

### Altman Z-Score

Table 4 shows the calculation results of the three financial distress models, namely Altman, Springate, and Grover at PT ASABRI in the periods of 2010-2018. Each model has varied calculation results. Altman Z-Score indicates PT ASABRI in the category of financial distress 4 times, 2 times in the grey area, and 3 times in the healthy category.

The ratio in the Altman Z-Score shows the ability of a company's assets to generate working capital, retained earnings, and earnings before interest and taxes. However, there is one ratio that shows the company's ability to know the amount of company capital used to bear long-term debt burden (Idi & Borolla, 2021). Meanwhile, assets at PT ASABRI itself is dominated by components of financial assets in the form of investments so profits are also generated more from the company's profits in carrying out investment activities. Altman Z-Score in 2010-2013 indicates that the company was experiencing financial distress. This is because of PT ASABRI experienced a decrease in current assets in 2012 by 24.17%. Current assets were mainly due to a significant decrease in investment receivables, which was 29.75%. This decrease in current assets caused the value of the company's working capital to decrease, resulting in a lower Z-Score for that year. Moreover, in 2013, the company experienced an increase in short-term liabilities caused by an increase in investment items of 18,180.30%. The increase was due to the company buying shares and bonds, one of which was PT Citra Maharlika Nusantara Corpora Tbk that worth IDR 29.9 billion.

Different conditions emerged in 2014 and 2015. The Altman Z-Score for that year categorized PT ASABRI into the grey zone. The grey zone means that the company has indications that it is prone to experiencing financial distress (Trivena, 2020). The change in status was due to the company's current assets in 2014 increasing by 709.8% from the previous year and in 2015 also increasing by 140.5%, thus, affecting the company's ability to generate net working capital from the company's total assets. The increase in current assets was mainly due to an increase in financial assets in the form of

investments, namely the number of shares available for sale compared to the year 2013. The number of shares available for sale owned by PT ASABRI in 2014 reached IDR 1.47 trillion, an increase of 2,509.6% from the previous year. One of the reasons for this increase was that the company bought PT. Eureka Prima Jakarta shares worth IDR 309.7 billion and PT. Hanson International shares are worth IDR 236.9 billion. In addition, the increase in current assets was also due to a letter from the Ministry of Finance Number S-884/MK.02/2014 dated 30 December 2014 which stipulated that PT ASABRI had the right to receive Receivable Future Benefit Liability for the implementation of the Old Age Savings (*Tabungan Hari Tua/THT*) program (2001-2012) of 1.087 trillion rupiahs.

Altman Z-Score categorizes ASABRI from 2016 to 2018 in the healthy category. This is because in 2016-2018 the company experienced quite good growth in current assets. Even in 2016, the growth reached 287.47% from the previous year. The increase in current assets was mainly due to the transfer of THT program membership between PT. Taspen and PT ASABRI. In the transfer, PT ASABRI acknowledged a debt of Rp. 37.29 billion and a receivable of Rp. 2.99 billion to PT. Taspen which will be implemented in January 2017. In addition, in 2016 there was also a penalty receivable due to delays in receiving MTN interest (Medium Term Note) PT. Prima Network and MTN PT. Hanson International. Another factor that led to an increase in current assets in 2016 was an increase in investment receivables due to an increase in Medium Term Note (MTN) interest receivables by 2,234.07%, an increase in bond interest receivables by 67.39%, and an increase in deposit interest receivables of 174.02%.

The increase in current assets was also due to the emergence of receivables for investment management fees and receivables for reimbursement of operational costs in 2016. These assets arose as a result of the issuance of PMK No. 53/PMK/02/2016 dated 4 April 2016 and PMK Number 211/PMK.02/2015 dated 30 November 2015. The calculation of the value of receivables for investment management services is 5% of the investment return after deducting the investment costs for the current year. Meanwhile, Receivables for Reimbursement of Operational Costs (*Biaya Operasional Penyelenggaraan/BOP*) originate from the State Revenue and Expenditure Budget (*Anggaran Pendapatan dan Belanja Negara/APBN*) by taking into account the state's financial capacity. Pension BOP Reimbursement Receivables from PT ASABRI as of December 31, 2016, amounted to IDR 37.2 billion.

### **Springate S-Score**

Based on Table 4, the Springate S-Score indicates that from 2010 to 2018 PT ASABRI experienced 5 financial distress and was healthy 4 times. The Springate S-Score is the same as the Altman S-Score which shows the company's ability to generate profits from its total assets. However, there is one ratio that involves profit before-tax information in its calculations. This ratio is profit before tax divided by short-term liabilities which can show the company's ability to pay off its short-term debt from the profits generated (Peter & Yoseph, 2011).

The Springate S-Score shows that in 2011, 2013, 2015, 2017, and 2018 the company experienced financial distress. This is because in 2011 and 2013 the ratio of earnings before interest and taxes to the company's total assets was very low so the actual return generated by the company from its assets was low. The company's small profit was due to the increase in claims and benefits expenses for PT ASABRI. The increase in claims expense was the result of the company's activities in

the previous year, namely the activity of improving data on PT ASABRI participants and coordinating counselling and socialization activities regarding PT ASABRI to participants and organizational devices. This activity has the impact of increasing the number of insurance participants who submit claims so that the claim burden on the company increases. In addition, the company's ability to pay off short-term debt in 2011 and 2013 was also small because the value of the company's profit before tax was less than the value of the company's short-term liabilities. This was caused by an increase in short-term liabilities in 2011 of 52.5% and an increase in investment costs incurred by the company in 2013 of 14,595.2%.

In 2015, 2017, and 2018 the company is also categorized as distressed in the Springate model. This is because the company experienced a decrease in sales of services in that year. The decline in sales of services in 2017 was mainly due to reduced company revenue from the accumulated pension contribution program. Whereas in 2018 it was caused by reduced company revenue in the THT, Work Accident Benefit (*Jaminan Kecelakaan Kerja/JKK*), and Death Benefit (*Jaminan Kematian/JKm*) programs. The low value of sales of these services proves that the company is not efficient in using all of the company's assets in generating sales volume of services in the THT, JKK, and JKm programs as well as the pension contribution accumulation program.

The Springate S-Score shows that in 2010, 2012, 2014, and 2016 it is included in the healthy category. In 2010, 2012, and 2014 the company has a high profit-before-tax ratio against short-term liabilities which indicates that the company has a good ability to pay off its short-term debt. The high ratio was caused by a decrease in the value of the company's short-term liabilities compared to the previous year. This decrease was the impact of a decrease in the value of Estimated Claim Liabilities in 2012 which reached 98.48% and a decrease in the value of Other Liabilities in 2012 amounted to 89.50% from the previous year. Whereas in 2016 the company experienced an increase in the value of current assets by 287.47% from the previous year. This increase was due to an increase in Medium Term Note (MTN) interest receivables by 2,234.07%, an increase in bond interest receivables by 67.39%, and an increase in deposit interest receivables by 174.02%. In addition, the increase in current assets was also due to the existence of receivables for investment management fees and receivables for reimbursement of operational costs, which only took effect in 2016.

### **Grover G-Score**

The Grover G-Score is generally similar to the Altman Z-Score, which shows the ability of the company's assets to generate working capital and profit before interest and taxes. However, the Grover G-Score adds the Return on Assets (ROA) ratio by measuring the value of net income divided by the total value of the company's assets. Hidayat & Farhan (2020) stated that the low value of the Grover G-Score model was caused by the negative value of operating profit/net profit obtained by the company. Then, after the researchers looked at the Grover G-Score model formula, companies that did not experience losses could not have a negative G-Score score. Financial distress occurs when companies have negative net operating income for several years and do not pay dividends or eliminate dividend payments, and layoffs (*Pemutusan Hubungan Kerja/PHK*) (Almilia & Kristijadi, 2003).

Table 4 shows that from 2010 to 2018, the Grover G-Score indicated that PT ASABRI was in the healthy category. The company has fairly good Grover ratios, so according to the Grover model, the company can generate good net working capital from total assets, can generate good profits, and has

good asset profitability as well. These results are not in line with the research of Laksmana & Darmawati (2019) which proved that the Grover Model can detect financial distress at PT Citra Maharlika Nusantara Corpora Tbk.

### Descriptive Statistics Model for Financial Distress

Table 5. Descriptive statistics model for financial distress

<i>Model</i>	<i>N</i>	<i>Distress</i>	<i>Minimum</i>	<i>Maximum</i>	<i>Mean</i>	<i>SD</i>
Z-Score	9	4	0,2327	4,7464	1,9431	1,7579
S-Score	9	5	0,2578	4,4788	1,1503	1,2844
G-Score	9	0	0,0925	1,2483	0,5235	0,4537

Descriptive statistics on observations of financial distress at PT ASABRI for nine years, from 2010 to 2018, are presented in Table 5. The year 2013 was the year that all three models achieved their lowest score. This indicates that the three models concur that 2013 was PT ASABRI's peak year. The highest score for the Altman and Grover models was in 2016, while the highest score for the Springate model came in 2010. This demonstrates that the Z-Score and G-Score agree that the company's financial performance improved in 2016. The standard deviation of the Z-Score and G-Score models is below the average score so that the variations in the Z-Score and G-Score values are not too high. While the standard deviation of the S-Score model is higher than the average value, so the S-Score value has a high variation.

Altman Z-Score categorized distress 4 times, Springate S-Score 5 times, and Grover G-Score never classify PT ASABRI to distress. It shows that the Altman Z-Score model and Springate S-Score can predict the financial distress condition of PT ASABRI. Meanwhile, the average score of Altman is 1,94 (above the limit of 1,1), the average Springate is 1,15 (above the limit of 0,86), and the average Grover is 0,52 (above the limit -0,02). It is because the score of each model varied for every year of observation or showing the company performance that fluctuated.

### Analysis of Financial Fraud Statement

Financial statement fraud in this study referred to the definition of fraud by the Association of Certified Fraud Examiners (ACFE), which is an intentional error of a company's financial condition through misrepresentation or omission of disclosure amounts in financial statements to deceive financial statement users (Ratmono et al., 2020). An example of financial statement fraud is exaggerating assets, income, and profits and understating liabilities, costs, and losses. In this case, the researchers used two models, namely Beneish M-Score and Dechow F-Score as tools to detect indications of fraud in the financial statements of PT ASABRI. Analysis of financial statement fraud at PT ASABRI was carried out by incorporating the company's financial statement coefficients related to the possibility of financial statement fraud into the two models used. The following is the result of calculating the financial statement fraud scores using the M-Score and F-Score models:

Table 6. Financial fraud score statement

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018
M-Score	-1,842	-1,8429	-3,0981	-0,3203	0,8073	-2,0609	-3,3236	-2,848	-
Description	<i>Fraud</i>	<i>Fraud</i>	Not	<i>Fraud</i>	<i>Fraud</i>	<i>Fraud</i>	Not	Not	-
F-Score	0,6725	0,6079	0,5404	0,5614	0,6439	0,693	0,6847	0,5988	0,6663
Description	Not	Not	Not	Not	Not	Not	Not	Not	Not



### **Beneish M-Score**

Table 6 shows the calculation results of the Beneish M-Score model and the Dechow F-Score model at PT ASABRI from 2010-2018. The Beneish M-Score indicates PT ASABRI is in the fraud category 5 times and 3 times does not indicate fraud. The Beneish M-Score shows that there are indications of fraud in companies in 2010, 2011, 2013, 2014, and 2015. This is due to the large value of the day's sales receivable index (DSRI) ratio in 2010, 2013, and 2014. The DSRI ratio itself is a ratio that compares trade receivables to sales generated by the company in one year with the previous year (Kartikasari & Irianto, 2010). A large value on the DSRI indicates the possibility of recording too much income (Christy & Stephanus, 2018). Whereas in 2015 the company experienced a decrease in the depreciation rate which was manifested by an increase in the value of the depreciation index (DEPI). According to Kartikasari & Irianto (2010), the DEPI ratio is the ratio that calculates the comparison between depreciation expenses and fixed assets before depreciation in a year with the previous year. Beneish (1999) states that the large value of the DEPI ratio can indicate a decrease in depreciation expense. The decrease in the value of depreciation expense on the company indicates that the company is more conservative than the previous year in depreciating. This also indicates the possibility for the company to increase the life of its fixed assets. This is what makes Beneish's score high enough to be categorized as a fraud in 2015.

The indications of fraud shown by the Beneish model can be linked to the former director of PT ASABRI, Adam R Damiri who is currently a suspect in the PT ASABRI corruption case based on the verdict of the panel of judges at the Tipikor Court at the Central Jakarta District Court. Adam R Damiri is the former President and Director of PT ASABRI from 2009-2016. From 2012 to 2016, Adam R Damiri together with Benny Tjokro (Director of PT. Hanson Internasional) agreed to regulate and control transactions and investments in shares and mutual funds of PT ASABRI through Benny Tjokro and parties affiliated with Benny Tjokro and Lukman Purnomosidi (Director of PT. Prima Network) which harmed PT ASABRI personally benefited Benny Tjokro, Lukman Purnomosidi, and other parties (Kontan, 2021a). PT ASABRI was the holder of 11.58% of PT. Hanson International's series C shares in 2016, while Benny Tjokro was also the holder of 10.85% of PT. Hanson International's series C shares. Based on the percentage of share ownership owned and based on the position of Benny Tjokro who is the President Director of PT Hanson International and Adam Damiri's position as the President Director of PT ASABRI, it is clear that they have the control to regulate investments and control investment transactions in both companies.

Different conditions occurred in 2012, 2016, and 2017 where the DSRI ratio was slightly smaller so that in those years the company was not categorized as fraud. The year before 2016 when PT ASABRI was categorized as fraud, was the year when there was a change in the board of directors namely the appointment of Sonny Widjaja as the new Main Director of PT ASABRI. Sonny Widjaja is currently also one of the suspects in the PT ASABRI corruption case. He agreed with Heru Hidayat (Director of PT. Trada Alam Minera and Director of PT. Maxima Integra) to regulate and control transactions and investments in shares and mutual funds of PT ASABRI (Kontan, 2021b). Whereas in 2018, researchers were unable to calculate the Beneish model due to incomplete data obtained from PT ASABRI's 2018 financial statements.



### Dechow F-Score

Dechow F-Score calculations from 2010 to 2018 show results that are consistent with not categorizing companies as fraud. This is caused by the low value of the accrual RSST ratio during the observation period. According to Skousen & Twedt (2009), RSST Accrual measures changes in current assets (except cash) reduced by changes in current liabilities (except short-term liabilities) and depreciation. This ratio also takes into account changes in long-term operating assets and long-term operating liabilities. Another factor that can cause ASABRI to be categorized as a non-manipulator is that from 2010 to 2018 PT ASABRI never issued securities. Companies that do not issue securities have a much lower risk of committing financial statement misstatements or fraudulent financial statements (Dechow et al. 2011). This shows that the Dechow F-Score is suitable for companies that issue securities such as stocks, deposits, bonds, and others. The results of this study are in contrast to the research of Meiryani et al. (2021) on manufacturing companies listed on the IDX which showed that the Dechow F-Score model can detect 6% of companies in the sample have very high risk and 4% of sample companies have a high risk of fraudulent financial statements.

### Descriptive Statistics of Fraud Model

Table 7. Descriptive statistics of fraud model statement

<i>Model</i>	<i>N</i>	<i>Fraud</i>	<i>Minimum</i>	<i>Maximum</i>	<i>Mean</i>	<i>SD</i>
M-Score	8	5	-3,3236	0,8073	-1,8161	1,4223
F-Score	9	0	0,5404	0,6930	0,6299	0,0553

Table 7 shows descriptive statistics on observations of indications of financial statement fraud for 9 years for the Dechow model and 8 years for the Beneish model, from 2010 to 2018 at PT ASABRI. The minimum score for Beneish occurred in 2016, while Dechow occurred in 2012. This shows that according to the M-Score, the year with the highest risk of fraud is 2016, while the F-Score is in 2012. The maximum score for the Beneish model occurs in 2014, while Dechow occurred in 2015. This means that the smallest risk of financial statement fraud according to the M-Score occurred in 2014, while according to the F-Score, it occurred in 2015. The standard deviation of the Beneish model is at 1.4223 or is greater than the average Beneish score, so the Beneish score has a high variation. Meanwhile, the standard deviation of the Dechow model is lower than the average value so that the variation in the Dechow score is not too high.

Beneish's M-Score categorizes fraud 5 times while Dechow's F-Score never categorizes PT ASABRI as fraud. This indicates that the Beneish M-Score can detect fraudulent financial statements at PT ASABRI, while the Dechow F-Score cannot detect fraudulent financial statements at PT ASABRI. The mean of the Beneish scores is -1.8161 (above the -2.22 threshold), while the Dechow average is 0.6299 (below the 1 threshold). This is because the score of each model varies every year of observation or shows very fluctuating company performance.

### CONCLUSION

The purpose of this study was to determine the condition of PT ASABRI's financial health condition using the Altman Z-Score, Springate S-Score, and Grover G-Score methods, as well as to detect the possibility of PT ASABRI's financial statement fraud using the Beneish M-Score and Dechow F-methods. Based on the analysis and discussion in the previous chapter, the researchers conclude:

First, each financial distress model, namely Altman, Springate, and Grover has varied calculation results. In this study, the Altman Z-Score and Springate S-Score models can predict financial distress compared to the Grover G-Score model. The Altman Z-Score model can indicate financial distress 4 times while the Springate S-Score is 5 times in 9 years of observation. Different things happened to the Grover model which did not indicate any financial distress at PT ASABRI during the observation period.

Second, the Beneish M-Score can detect indications of financial statement fraud at PT ASABRI compared to the Dechow F-Score model. The M-Score has detected indications of fraudulent statements at PT ASABRI 5 times in 8 years of observation. Different conditions occurred in the F-Score model which did not detect fraudulent financial statements at PT ASABRI in 9 years of observation, from 2010 to 2018.

This study has several limitations that can be considered for further research. The first limitation of this study is that researchers only used internal financial conditions that exist in PT ASABRI's financial statements and annual reports as indicators of financial distress and fraudulent financial statements. Second, researchers only analysed each variable but saw the relationship between each variable used. Third, the Beneish M-Score and Dechow F-Score are probabilistic financial statement fraud detection tools, so they cannot show 100% accuracy (Christy & Stephanus, 2018).

Based on the drawing of conclusions and limitations, the suggestions for further research are; firstly, further research can look at and calculate factors outside the company, such as the company's industry economic condition, the country's economic conditions, and others. Secondly, according to Dechow et al. (1995) and Beneish (1997) in Soepriyanto et al. (2021), there is a relationship between accounting manipulation and financial conditions. It means when a company manipulates accounting or fraudulent financial statements, it is because the company is in a bad financial condition. Therefore, further research can relate the relationship of each variable to other variables. Thirdly, future research can include several variables which include financial factors and non-financial factors to make more accurate predictions.

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