DETECTION OF FINANCIAL DISTRESS AS AN EFFORT EARLY WARNING SYSTEM FOR COAL MINING COMPANIES LISTED ON THE INDONESIA STOCK EXCHANGE PERIOD 2019 – 2021

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ABSTRACT

This study aims to detect financial distress in coal mining companies listed on the IDX for the 2019-2021 period as an early warning system based on indicators of the BOPO ratio, sales volume growth, liquidity ratio, leverage ratio, and profitability ratios. The population used in this study were 27 coal mining companies. The type of research used is quantitative research through secondary data sources in the form of published financial reports that have been audited by public accountants. The results of this study are divided into 3, namely companies that are not detected in financial distress, companies that are not detected, and companies that are detected in financial distress. From this analysis, there were 9 companies not detected financial distress, 0 companies not detected, and 18 companies detected financial distress.

Keywords: Early Warning System, Financial Distress, and Financial Ratio

INTRODUCTION

Indonesia is a country that has abundant natural resources in the form of coal. Utilization of coal as an energy source in various industries and power plants makes coal have good economic value . In various countries the tendency to use coal as an energy resource is quite high. From the performance report of the Ministry of Energy and Mineral Resources for 2021, coal production in Indonesia reached 614 million tons , while the total coal exported was 435 million tons, meaning that 70.8% of Indonesian coal was exported to other countries.

However, the economic condition has recently experienced a considerable shock due to the co-19 pandemic and various other problems that have occurred. Moreover, countries that are importers of Indonesian coal also experience a weakening economy, resulting in a decrease in the amount of Indonesian coal exports.

The weakening rate of China's economic growth also has an impact on the amount of Indonesian coal exports, because China is the largest consumer of Indonesian coal. If industrial activity in China slows down, the demand for coal will also decrease. This has an impact on domestic coal mining companies that rely on coal sales of more than 70% abroad. The following is Indonesia's coal export data obtained from the Central Bureau of Statistics:

Source: Central Bureau of Statistics, November 2021

Figure 1. Value of Indonesian Coal Exports.

Apart from the problem of the number of Indonesian coal exports, another thing that has a major influence on the condition of the coal mining industry is the price of coal. Where the price of coal always changes every month. This is what makes the condition of coal mining companies not having the certainty of the right profit value. The following is coal price data obtained from the website of the Ministry of Energy and Mineral Resources :

Source: www.minerba.esdm.go.id/harga_acuan

Figure 2. Reference Coal Price (HBA) Year 2012 – 2021

The problems faced, especially the number of exports and the price of coal, are what cause Indonesian coal mining companies to experience financial distress.

Farida (2021:4) Financial distress can be interpreted as a condition in which a company is unable to fulfill its obligations. In theory, there are many indicators that can be used to see and analyze whether a company is experiencing financial difficulties or not. The easiest measure is to use profit indicators. If this condition continues, the company will reach the bankruptcy stage where the company cannot operate again.

The company's financial condition is a way to detect financial distress as an Early Warning System (EWS). According to Glantz (2004:90) Early Warning System is a detection of unwanted situations through effective and timely information by identifying and allowing someone to act with the aim of avoiding or reducing risk, thus the Early Warning System can provide a warning early warning of the possibility of the company's financial difficulties in the future and can be used to determine strategic steps in making decisions as a prevention.

There are various methods developed to detect financial distress for companies, one of which is the use of cash flow analysis. The greater the amount of net cash inflow from operations in the future, the greater the company's ability to stand up and cope with changes that occur in the company's operational conditions. In other words, if the company has cash flow from operating activities that is limited, even negative, then there is a possibility that the company is experiencing financial distress . If there are changes in economic conditions that

affect the company's operational activities, companies will tend to experience financial distress if their operating cash flow is not large or even negative.

Based on the background described above, there is a phenomenon that occurs related to the export value and selling price of coal, where this can have the potential for financial distress for coal mining companies, especially those listed on the Indonesian Stock Exchange, so that researchers are motivated conducted research to detect financial distress as an early warning system for coal mining companies listed on the Indonesia Stock Exchange for the period 2019 – 2021 in terms of external factors, operational and financial conditions with the hope that the results of this research analysis can become a reference for coal mining companies.

Based on the description of the background that has been formulated previously, the objectives of this study are as follows :

    1.   Knowing how much macroeconomic conditions can affect financial distress.

    2.   Know the macroeconomic conditions that can be used as a reference for the early warning system..

    3.   Knowing how much operational financial performance can affect financial distress.

    4.   Knowing the operational financial performance that can be used as a reference for the early warning system.

    5.   Knowing how to detect financial distress as early warning system.

LITERATURE REVIEW

Financial Distress

According to Kristanti (2021:4) financial distress is a condition in which a company is unable to fulfill its obligations. In theory, there are many indicators that can be used to see and analyze whether a company is experiencing financial difficulties or not. The easiest measure is to use profit indicators.

Causes of Financial Distress

Causes of financial distress can occur due to :

1. Poor business planning from a marketing, production, distribution, or financial perspective. If the company's operations are not planned properly and carefully (especially in terms of cost budgeting), then the business has the potential to experience financial distress.

2. Troubled cash flows can have a very large influence on financial ratios to financial distress. If the company's finances have non-current cash flows, then the business is threatened with financial distress in a short period of time. What is meant by the smooth flow of cash here can include the smooth collection of accounts receivable, the purchase of raw materials as needed, and so on.

3. The influence of capital structure is too risky also very significant, especially for the long term. If a company is funded too much by liabilities (debt), then the business is threatened with legal bankruptcy and bankruptcy.

4. Operational losses in the marketing division continue to fail to meet targets, so the company is threatened with financial distress, either because it fails to carry out operational obligations or fails to satisfy investors.

Prevention Financial Distress

In order to avoid the factors that cause financial distress, below are several ways to prevent it, including :

1. Focus on business liquidity, meaning focus on smoothing cash flow and reserves. In order to realize this, there are several efforts that can be taken, for example using a factoring service to collect accounts payable, forming a marketing team with achievements tall, to choose a minimal risk investment instrument.

2. Create a corporate strategy to deal with the worst times, create various reserve strategies to replace the main strategy, including strategies to deal with the worst conditions. As discussed earlier, the factors that cause financial distress are not only internal, but also external to the company. So make sure the company has a reliable strategy to deal with externalities such as monetary crises, inflation, and so on.

3. Set limits on providing trade payables, where trade payables are one of the causes of the company's cash flow not smooth. From a marketing perspective, accounts payable is good because it can increase sales. However, if the billing is not good, then the impact is also bad in terms of finance. Therefore, make sure the company does not give too much trade debt to consumers.

4. Keep the balance of payments in balance as we all know, the effect of financial ratios on financial distress is significant. So make sure the company has a balanced balance of payments, not too much debt or accounts receivable.

5. Setting up insurance for unforeseen conditions, for example labor, machinery, and valuable asset insurance. The advantage of insurance is that you can get liquidity assistance when a business has financial problems, so you can avoid bankruptcy.

Early Warning System (EWS)

According to Smith, et.al. (1994) defines an early warning system as follows "A system of data collection and analysis to monitor people's well being (including security), in order to provide timely notice when an emergency threatens, and thus to elicit an appropriate response".

According to Buchanan (1994) the main purpose of the Early Warning System is to monitor the emergence of signs of threat and can trigger early prevention or appropriate response and reduce the impact of the disaster risk.

According to the formal UN in Glantz (2004), an early warning system is an assessment of an unwanted situation through effective and timely information by identifying and allowing someone to act with the aim of avoiding or reducing risk.

EWS benefits

According to Fauzan (2012) the Early Warning System has the following benefits:

1. Helps identify problems within the company early so that corrective actions can be taken immediately.

2. Help identify companies that require further monitoring to avoid possible bankruptcy in the future.

3. Helps facilitate identification related to the position of the company's financial performance.

Ratio of Operating Expenses and Operating Income (BOPO)

According to Veithzal (2013:131) the meaning of BOPO is the ratio used to measure the level of efficiency and ability of a bank to carry out its operational activities.

According to Malayu Hasibuan (2011:101) suggests the meaning of BOPO is a comparison or ratio of operating costs in the last 12 months to operating income in the same period.

With efficiency in banking institutions, especially cost efficiency, optimal profit levels will be obtained, increasing the amount of funds disbursed, more competitive costs, improving services to customers, increasing security and banking health, in Mudrajad and Suhardjono (2002:569).

According to Ambo (2013) the BOPO ratio is the ratio between operational costs and operating income. The BOPO ratio is used to measure the level of efficiency and ability of a bank in carrying out its operational activities. The greater the BOPO, the smaller or decreased the banking financial performance. Vice versa, if BOPO is getting smaller, it can be concluded that financial performance is increasing or improving.

BOPO measurements

Systematically according to (Veithzal et al, 2013:131) the formula for the ratio of operating income to operating income (BOPO) is :

$$BOPO = \frac{\text{Operational Costs}}{\text{Operating income}} X\ 100\%$$

Operational costs are the total of all costs directly related to operational activities. Operating Income is the total of income resulting from operational activities. In SE BI No. 6/23/DPNP dated 31 May 2004 explains that the value of the BOPO ratio will look efficient if it reaches a maximum value of 93.52%.

BOPO indicator

According to Lukman Dendawijaya (2009:111) there are several indicators of income and operational costs, namely :

1. Operating Income
   Operating income consists of all income that is a direct result of business activities that has actually been received, such as :

   1) Interest Yield
   2) Provision and Commission
   3) Other Income

2. Operating costs
   Are all costs that are directly related to detailed bank business activities, such as:

   1) Interest Fee
   2) Cost (Revenue) of Writing Off Earning Assets
   3) Estimated Commitment & Contingencies Loss Cost
   4) Other Operational Costs :

      1. Other insurance premiums
      2. Research and development
      3. Rent and Promotion
      4. Taxes (excluding income tax)
      5. Goods and services
      6. Depreciation, amortization or write-off of fixed assets and inventory and deferred amortization
      7. Personnel Expenses
      8. Cost of Impairment of Securities Value

9. Forex Transaction Fees
10. Other costs (commissions / provisions and derivative transactions, credit insurance premiums and guarantees for third party funds)

Sales Volume

The definition of sales volume according to John Downes and Jordan Elliot Goodman translated by Susanto Budidharmo (2000:646), namely the total sales obtained from commodities traded in a certain period.

According to Alamiyah and Padji (2003:126) the volume of sales that a company has achieved or wants to achieve in a certain period.

Sales Volume Indicator

According to Dwi Prastowo and Rifka Jualianty (2002:148), where to find the following total sales :

$$Total Sales = Selling \ Price \ Per \ Unit \ x \ Total Units \ Sold$$

Based on some of the definitions above, it can be concluded that sales volume is the result of sales activities carried out by the company in an effort to achieve the goal of maximizing profits.

Liquidity Ratio

According to Kasmir (2019:130) the liquidity ratio or often referred to as the working capital ratio is the ratio used to measure how liquid a company is. The trick is to compare the components on the balance sheet, namely total current assets with short-term debt. This assessment can be carried out for several periods so that the development of the company's liquidity can be seen from time to time.

1. Current Ratio
   Is a ratio to measure the company's ability to pay short-term obligations or debts that are due soon when billed as a whole.

$$Current \ Ratio = \frac{Current \ Assets}{Current \ Liabilities}$$

In practice it is often used that the standard current ratio is 200% (2:1) which is sometimes considered a good enough or satisfactory measure for the company. This means that with the results of such a ratio, the company already feels at a safe point in the short term.

Example :

$$CR = \frac{Rp. 1.640}{Rp. 750} = 2,18 \ Times \ (rounded \ 2,2)$$

This means that the amount of current assets is 2.2 times current debt, or every 1 rupiah of current debt is guaranteed by 2.2 rupiah of current assets or 2.2:1 between current assets and current debt.

2. Quick Ratio
   Is a ratio that shows the company's ability to meet or pay obligations or current debt (short-term debt) with current assets without taking into account the value of inventory (inventory). This means that we ignore the value of inventory, by subtracting it from the total value of current assets. This is done because inventory is considered to require a relatively longer time to be cashed, if the company needs fast funds to pay its obligations compared to current assets.

$$\text{Quick Ratio} = \frac{\text{Current Assets} - \text{Inventory}}{\text{Current Liabilities}}$$

To find the quick ratio, measure the total current assets, then reduce the inventory value. Sometimes companies also include prepaid expenses if any and are compared with all current liabilities.

Example :

$$\text{Quick Ratio} = \frac{\text{Rp.}\,1.340 - \text{Rp.}\,310}{\text{Rp.}\,750} = 1,4\,\text{Times}$$

If the industry average for the quick ratio is 1.5 times, then the company's condition is better than other companies. This condition indicates that the company does not have to sell inventory if it wants to pay off current debt, but can sell securities or collect receivables.

Leverage Ratio

Leverage ratio is a ratio that serves to assess a company's ability to pay off all of its obligations, both in the short term and in the long term, with guaranteed assets or assets owned by the company.

This ratio will describe the amount of company assets owned by a shareholder compared to assets owned by creditors or creditors. If the company's assets are owned by more shareholders, then the company will experience less leverage. If the lender or creditor (usually a bank in this case) owns the dominant assets, the company will then have a higher level of leverage .

Leverage itself is the ability of a company to pay off all debts by using assets as collateral for debt which is the basic concept of accounting. The company's leverage will also reflect the company's ability to pay off or repay all loans through the total assets it owns. This ability will also affect the financial statements of a company.

1. Debt to Asset Ratio (DAR)
   Is a debt ratio that is used to measure the comparison between total debt and total assets. In other words, how much the company's assets are financed by debt or how much the company's debt affects asset management.

$$\text{DAR} = \frac{\text{Total Debt}}{\text{Total Assets}}$$

From the measurement results, if the ratio is high, it means that there is more funding with debt, it will be more difficult for the company to obtain additional loans because it is worried that the company will not be able to cover its debts with its assets. Likewise, if the ratio is low, a small number of companies are financed with debt. The measurement standard for assessing whether a company's ratio is good or not, is the average ratio of a similar industry.

Example :

$$\text{DAR} = \frac{\text{Rp.}\,2.050}{\text{Rp.}\,4.200} = 0,48\;(49\%)$$

This ratio shows that 49% of the company's funding is financed with debt. This means that every Rp. 100,- company funding, Rp. 49,- financed with debt and Rp. 41,- provided by the shareholders.

If the industry average is 35%, the company's DAR is still below the industry average so it will be difficult for companies to obtain loans. This condition also shows that companies are financed by almost half of the debt.

2. Debt to Equity Ratio (DER)
   Is the ratio used to assess debt to equity. This ratio is sought by comparing all debt, including current debt with all equity.

$$DER = \frac{\text{Total Debt}}{\text{Equity}}$$

For banks (creditors), the greater this ratio, the more unprofitable it will be because the greater the risk borne by the failure that may occur in the company. However, for companies, the greater the ratio, the better. Conversely, with a low ratio, the higher the level of funding provided by the owner and the greater the security limit for the borrower in the event of a loss or depreciation of the asset value.

Example :

$$DER = \frac{\text{Rp. 2.050}}{\text{Rp. 2.250}} = 0{,}911\ \%\ (91\%)$$

This ratio shows that creditors provide Rp. 91,- for every Rp. 100,- provided by the shareholders. If the industry average ratio for DER is 80%, the company is still considered unfavorable because it is above the industry average.

Profitability Ratio

According to Kasmir (2019:198) The profitability ratio is a ratio to assess a company's ability to make a profit. This ratio also provides a measure of the effectiveness of a company's management. This is demonstrated by the profit generated from sales and investment income.

1. Results / Return on Investment (ROI)
   ROI is a profitability ratio calculated from net profit after deducting taxes to total assets. ROI is useful for measuring the ability of the company as a whole to generate profits against the total assets available to the company. The higher this ratio means the better the condition of a company.

$$ROI = \frac{\text{Earning After Interst and Tax (EAIT)}}{\text{Total Assets}}$$

In addition, the return on investment shows the productivity of all company funds, both loan capital and own capital. The smaller (lower) this ratio, the less good, and vice versa. This means that this ratio is used to measure the effectiveness of all company operations.

Example :

$$ROI = \frac{\text{Rp. 1.296}}{\text{Rp. 4.200}}$$

The ROI calculation shows that the rate of return on investment is 31%. If the industry average for ROI is 30%, then the company's profit margin is good.

2. Return on Equity Ratio (ROE)
   ROE is a profitability ratio to assess a company's ability to generate profits from the investment of the company's shareholders expressed as a percentage. ROE is calculated from the company's income (income) to the capital invested by the company's owners (common stockholders and preferred stockholders). Return on equity shows how successful the company is in managing its capital (net worth), so that the level of profit is measured from the investment of capital owners or company shareholders.

$$ROE = \frac{\text{Earning After Interst and Tax (EAIT)}}{\text{Equity}}$$

Example :

$$ROE = \frac{Rp.\,1.296}{Rp.\,2.250} = 57{,}6 \text{ (Rounded 58\%)}$$

If the industry average for ROE is 40%, it means that the company's condition is quite good.

RESEARCH METHODS

This type of research is quantitative research. The population that will be used in this study are 27 coal mining companies listed on the Indonesia Stock Exchange for 2019 – 2021. The research data used is in the form of secondary data in the form of published financial statements that have been audited by public accountants. And the data is taken from www.idx.co.id which is the official website of the Indonesia Stock Exchange .

RESULTS AND DISCUSSION

List of Research Object Companies

The data that is the object of research is a company engaged in the coal mining sector which publishes financial reports from 2019 – 2015 on the Indonesia Stock Exchange. In that year there were 27 coal mining companies listed on the Indonesia Stock Exchange. Of the 27 companies, there were no criteria for the companies studied, but all coal mining companies listed on the Indonesia Stock Exchange that year. The following are companies listed on the Indonesia Stock Exchange for the 2019 – 2021 period :

Table 1. List of Object Companies

Study.

No	Code	Company name
1	ADRO	PT. Adaro Energy, Tbk.
2	AIMS	PT. Akbar Indo Makmur Stimec, Tbk.
3	ARII	PT. Atlas Resources, Tbk.
4	BOSS	PT. Borneo Olah Sarana Sukses, Tbk.
5	BSSR	PT. Baramulti Sukses Sarana, Tbk.
6	BESS	PT. Batulicin Nusantara Maritime, Tbk.
7	BRMS	PT. Bumi Resources Minerals , Tbk.
8	BYAN	PT. Bayan Resources, Tbk.
9	CNKO	PT. Indonesian Energy Exploitation, Tbk.
10	GOD	PT. Darma Henwa, Tbk.
11	DOID	PT. Delta Dunia Makmur, Tbk.
12	DSSA	PT. Dian Swastatika Sentosa, Tbk.
13	DWGL	PT. Dwi Guna Laksana, Tbk.
14	FIRE	PT. Alfa Energi Investama, Tbk.
15	GEMS	PT. Golden Energy Mines, Tbk.
16	HRUM	PT. Harum Energy, Tbk.
17	INDY	PT. Indika Energy, Tbk.
18	ITMA	PT. Mainstay Energy Source, Tbk.
19	ITMG	PT. Indo Tambangraya Megah, Tbk.
20	KKGI	PT. Natural Resources Indonesia, Tbk.

21	MBAP	PT. Mitrabara Adiperdana, Tbk.
22	MYOH	PT. Samindo Resources, Tbk.
23	PKPK	PT. Prime Karya Perkasa, Tbk.
24	PTBA	PT. Bukit Asam, Tbk.
25	PTRO	PT. Petrosea, Tbk.
26	SMMT	PT. Golden Eagle Energy, Tbk.
27	TOBA	PT. TBS Energi Utama , Tbk.

BOPO ratio

Table 2. BOPO ratio.

No	Code	BOPO		
		2019	2020	2021
1	ADRO	72%	77%	56%
2	AIMS	0.0%	95%	91%
3	ARII	100%	113%	81%
4	BOSS	68%	22%	20%
5	BSSR	74%	70%	49%
6	BESS	70%	66%	60%
7	BRMS	116%	28%	41%
8	BYAN	65%	67%	33%
9	CNKO	92%	88%	86%
10	GOD	94%	98%	89%
11	DOID	84%	91%	85%
12	DSSA	65%	65%	58%
13	DWGL	94%	88%	92%
14	FIRE	85%	78%	73%
15	GEMS	67%	64%	52%
16	HRUM	74%	73%	48%
17	INDY	85%	80%	70%
18	ITMA	0.0%	0.0%	0.0%
19	ITMG	81%	83%	56%
20	KKGI	86%	90%	69%
21	MBAP	65%	67%	46%
22	MYOH	84%	79%	75%
23	PKPK	63%	73%	95%
24	PTBA	65%	74%	54%
25	PTRO	83%	78%	82%
26	SMMT	85%	94%	68%
27	TOBA	83%	89%	83%

The standard BOPO ratio is if > 65% is categorized as bad condition, whereas if < 65% is categorized as good condition. This means that 65% is operational costs incurred, 35% net operating income earned.

Sales Volume

Table 3. Sales Volume Growth.

No	Code	Coal Sales Volume Growth		
		2019	2020	2021
1	ADRO	8%	-9%	-6%
2	AIMS	0%	100%	17%
3	ARII	44%	-38%	29%
4	BOSS	89%	-21%	-10%
5	BSSR	12%	-12%	22%
6	BESS	11%	9%	11%
7	BRMS	7%	-37%	16%
8	BYAN	3%	20%	10%
9	CNKO	11%	-12%	3%
10	GOD	1%	-2%	-2%
11	DOID	10%	-10%	16%
12	DSSA	31%	0%	-3%
13	DWGL	19%	-15%	23%
14	FIRE	-110%	-86%	49%
15	GEMS	5%	-8%	-8%
16	HRUM	-12%	-46%	-75%
17	INDY	2%	-6%	6%
18	ITMA	0	0%	0%
19	ITMG	13%	-19%	-4%
20	KKGI	62%	-35%	-13%
21	MBAP	19%	-14%	5%
22	MYOH	1%	-6%	8%
23	PKPK	-14%	21%	-67%
24	PTBA	0%	5%	8%
25	PTRO	19%	-15%	-11%
26	SMMT	16%	-38%	-20%
27	TOBA	-17%	-31%	-14%

Sales volume growth is the result of the company's annual production achievements.

Liquidity Ratio

Table 4. Liquidity Ratio (Current Ratio) .

No	Code	Current Ratio (Times) (Current Ratio)		
		2019	2020	2021
1	ADRO	1.71	1.51	2.08
2	AIMS	5.91	1.00	1.19
3	ARII	0.24	0.21	0.44
4	BOSS	1.34	0.58	0.59
5	BSSR	1.21	1.58	1.60
6	BESS	0.23	0.97	1.24
7	BRMS	0.33	0.70	2.97
8	BYAN	0.89	3,25	3,13
9	CNKO	0.45	0.24	0.32
10	GOD	1.04	1,12	0.81
11	DOID	1.83	1.67	1.42
12	DSSA	1.30	1.55	1.70
13	DWGL	1.35	0.89	0.93
14	FIRE	2.80	2,26	1.39
15	GEMS	1.61	1.23	1.02
16	HRUM	9,22	10.07	3.07
17	INDY	2.01	1.97	1.89
18	ITMA	9.77	1.05	0.33
19	ITMG	2.03	1.98	2.71
20	KKGI	2,17	3.05	2,42
21	MBAP	3.60	3.74	3.98
22	MYOH	3,28	6,31	6,72
23	PKPK	146,13	3.86	14,20
24	PTBA	2.49	2,16	2.43
25	PTRO	1.52	1.64	1.38
26	SMMT	0.61	0.58	2,13
27	TOBA	0.92	0.73	1.74

The CR standard is if > 2 times is categorized as good, while < 2 times is categorized as bad. This means that the amount of current assets is 2 times the current liabilities, or every 1 rupiah of current liabilities is guaranteed by 2 rupiah of current assets.

Table 5. Liquidity Ratio (Quick Ratio) .

No	Code	Quick Ratio (Times), (Quuck Ratio)		
		2019	**2020**	**2021**
1	ADRO	1.61	1.42	1.99
2	AIMS	5.91	1.00	1.19
3	ARII	0.22	0.19	0.40
4	BOSS	0.72	0.26	0.39
5	BSSR	1.01	1.45	1.48
6	BESS	0.23	0.97	1.24
7	BRMS	0.32	0.57	2.89
8	BYAN	0.53	2.88	2.93
9	CNKO	0.43	0.23	0.31
10	GOD	0.88	1.02	0.71
11	DOID	1.62	1.49	1.28
12	DSSA	1.20	1.43	1.58
13	DWGL	1.32	0.83	0.90
14	FIRE	2.01	2.03	1.30
15	GEMS	1.51	1.18	0.95
16	HRUM	8.70	9.59	2.81
17	INDY	1.94	1.91	1.84
18	ITMA	9.77	1.05	0.33
19	ITMG	1.59	1.69	2.54
20	KKGI	1.67	2.47	2.01
21	MBAP	3,29	3.35	3.76
22	MYOH	2.67	5,18	5.78
23	PKPK	144.25	3.86	14,20
24	PTBA	2,19	1.95	2,27
25	PTRO	1.47	1.61	1.33
26	SMMT	0.59	0.49	2.03
27	TOBA	0.45	0.48	1.62

The QR standard is if >1.5 times is categorized as good, while <1.5 times is categorized as bad. This means that the amount means that if it is > 1.5 times, then the company does not have to sell inventory if it wants to pay off current liabilities (simply collect receivables).

Liquidity Ratio

Table 6. Leverage Ratio (Debt to Assets Ratio).

No	Code	DAR		
		2019	**2020**	**2021**
1	ADRO	45%	38%	41%
2	AIMS	22%	39%	35%
3	ARII	87%	92%	89%
4	BOSS	78%	87%	115%
5	BSSR	32%	28%	42%
6	BESS	65%	49%	35%
7	BRMS	27%	17%	10%
8	BYAN	52%	47%	23%
9	CNKO	142%	204%	201%
10	GOD	57%	51%	52%
11	DOID	76%	73%	84%
12	DSSA	56%	45%	42%
13	DWGL	105%	107%	89%
14	FIRE	37%	30%	38%
15	GEMS	54%	57%	62%
16	HRUM	11%	9%	26%
17	INDY	71%	75%	76%
18	ITMA	0.03%	0.2%	6%
19	ITMG	27%	27%	28%
20	KKGI	26%	22%	25%
21	MBAP	24%	24%	22%
22	MYOH	24%	15%	14%
23	PKPK	80%	41%	37%
24	PTBA	29%	30%	33%
25	PTRO	61%	56%	51%
26	SMMT	33%	36%	22%
27	TOBA	58%	62%	59%

The standard DAR is if > 35% is categorized as bad, while DAR <35% is categorized as good. This means every Rp. 100,- company funding, financed by Rp. 35,- liabilities and Rp. 65, - shareholders.

Table 7. Leverage Ratio (Debt to Equity Ratio).

No	Code	DER		
		2019	2020	2021
1	ADRO	81%	61%	70%
2	AIMS	29%	63%	53%
3	ARII	690%	1179%	845%
4	BOSS	351%	700%	-771%
5	BSSR	47%	38%	72%
6	BESS	185%	96%	55%
7	BRMS	37%	21%	11%
8	BYAN	106%	88%	31%
9	CNKO	-341%	-197%	-199%
10	GOD	135%	104%	108%
11	DOID	321%	269%	516%
12	DSSA	127%	84%	72%
13	DWGL	-1956%	-1439%	813%
14	FIRE	60%	43%	61%
15	GEMS	118%	133%	162%
16	HRUM	12%	10%	34%
17	INDY	228%	303%	318%
18	ITMA	0.03%	0.2%	6%
19	ITMG	37%	37%	39%
20	KKGI	35%	29%	34%
21	MBAP	32%	32%	29%
22	MYOH	31%	17%	17%
23	PKPK	400%	70%	60%
24	PTBA	42%	42%	49%
25	PTRO	159%	129%	105%
26	SMMT	49%	56%	29%
27	TOBA	140%	165%	142%

The DER standard is if > 80% is categorized as bad, while <85% is categorized as good. This means every Rp. 100,- company funding, financed by Rp. 80,- liabilities and Rp. 20, - shareholders.

Liquidity Ratio

Table 8. Profitability Ratio (Return On Investment/ ROI)

No	Code	ROI		
		2019	2020	2021
1	ADRO	6%	2%	14%
2	AIMS	-4%	-4%	11%
3	ARII	-2%	-5%	0.2%
4	BOSS	0.3%	-15%	-32%
5	BSSR	0.01%	12%	47%
6	BESS	2%	8%	17%
7	BRMS	0.2%	1%	7%
8	BYAN	18%	21%	52%
9	CNKO	7%	-24%	-6%
10	GOD	1%	0.3%	0.2%
11	DOID	2%	-2%	0.02%
12	DSSA	2%	-2%	9%
13	DWGL	-3%	5%	8%
14	FIRE	2%	3%	-9%
15	GEMS	9%	12%	43%
16	HRUM	5%	12%	11%
17	INDY	0.1%	-3%	2%
18	ITMA	9%	8%	7%
19	ITMG	10%	3%	29%
20	KKGI	4%	-8%	17%
21	MBAP	18%	15%	39%
22	MYOH	16%	15%	16%
23	PKPK	-58%	0.04%	-1%
24	PTBA	15%	10%	22%
25	PTRO	6%	6%	6%
26	SMMT	-3%	-3%	24%
27	TOBA	7%	5%	8%

ROI standard is > 30% categorized as good, while <30% is categorized as bad). This means that if the rate of return on investment obtained by 30% is good.

Table 9. Profitability Ratio (Return On Equity / ROE).

No	Code	ROE		
		2019	2020	2021
1	ADRO	11%	4%	23%
2	AIMS	-5%	-7%	17%
3	ARII	-12%	-58%	2%
4	BOSS	1%	-121%	212%
5	BSSR	0%	16%	81%
6	BESS	5%	16%	26%
7	BRMS	0.2%	1%	8%
8	BYAN	38%	40%	68%
9	CNKO	-17%	23%	6%
10	GOD	2%	1%	0.4%
11	DOID	7%	-9%	0.1%
12	DSSA	4%	-4%	15%
13	DWGL	47%	-68%	69%
14	FIRE	3%	4%	-15%
15	GEMS	19%	27%	112%
16	HRUM	5%	13%	15%
17	INDY	0.4%	-12%	7%
18	ITMA	9%	8%	7%
19	ITMG	14%	4%	40%
20	KKGI	6%	-10%	23%
21	MBAP	24%	20%	50%
22	MYOH	21%	17%	19%
23	PKPK	-290%	0.1%	-2%
24	PTBA	22%	14%	33%
25	PTRO	15%	14%	13%
26	SMMT	-4%	-4%	31%
27	TOBA	17%	12%	19%

Standard ROE is > 40% categorized as good, while <40% is categorized as bad. This means that if the rate of return on investment obtained by 40% is good.

Financial Distress Detection

Companies experiencing financial distress can be analyzed based on :

1. BOPO ratio (operating expenses operating income).
2. Sales volume growth.
3. Liquidity ratio, through current ratio and quick ratio.
4. Leverage ratio, through debt to assets ratio and debt to equity ratio.
5. Profitability ratio, through return of investment and return of equity.

Financial distress detection is based on points from each ratio, where from these points are added up from all ratios, so it can be concluded that :

1. It is said NOT DETECTED FD, if it has an average point >3.

2. It is said NOT DETECTED, if it does not have a point (-).

3. It is said to be DETECTED FD, if it has a number of points <2.

From the results of this analysis, it can be concluded that the coal mining companies listed on the Indonesia Stock Exchange in 2019 – 2021 are financial distress detected, not detected, and not detected as financial distress.

Table 10. Results of the point assessment of the sum of all ratios.

No	Code	BOPO ratio			Sales Volume Growth			Liquidity, Current Ratio			Liquidity, Quick Ratio			Leverage, DAR			Leverage, DER			Profitability, ROI			Profitability, ROE			Average
		19	20	21	19	20	21	19	20	21	19	20	21	19	20	21	19	20	21	19	20	21	19	20	21	
1	ADRO	2	2	3	1	1	1	4	4	5	5	4	5	1	1	1	1	2	2	1	1	1	1	1	1	2
2	AIMS	1	1	1	1	5	1	5	3	3	5	4	4	3	1	1	4	2	3	1	1	1	1	1	1	2
3	ARII	1	1	1	3	1	2	1	1	1	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1
4	BOSS	2	4	5	5	1	1	3	2	2	3	2	2	1	1	1	1	1	5	1	1	1	1	1	5	2
5	BSSR	2	2	3	1	1	2	3	4	4	4	4	4	2	2	1	3	4	2	1	1	5	1	1	5	3
6	BESS	2	2	3	1	1	1	1	2	3	2	3	4	1	1	1	1	1	3	1	1	2	1	1	2	2
7	BRMS	1	4	3	1	1	1	1	2	5	2	3	5	2	3	4	4	4	5	1	1	1	1	1	1	2
8	BYAN	2	2	4	1	1	1	2	5	5	3	5	5	1	1	3	1	1	4	2	3	5	4	4	5	3
9	CNKO	1	1	1	1	1	1	1	1	1	2	2	2	1	1	1	5	5	5	1	1	1	1	1	1	2
10	GOD	1	1	1	1	1	1	3	3	2	3	4	3	1	1	1	1	1	1	1	1	1	1	1	1	2
11	DOID	1	1	1	1	1	1	4	4	3	5	4	4	1	1	1	1	1	1	1	1	1	1	1	1	2
12	DSSA	2	2	3	2	1	1	3	4	4	4	4	5	1	1	1	1	1	2	1	1	1	1	1	1	2
13	DWGL	1	1	1	1	1	2	3	2	2	4	3	3	1	1	1	5	5	1	1	1	1	5	1	5	2
14	FIRE	1	2	2	1	1	3	5	5	3	5	5	4	1	2	1	2	3	2	1	1	1	1	1	1	2
15	GEMS	2	2	3	1	1	1	4	3	3	5	4	3	1	1	1	1	1	1	1	1	5	1	2	5	2
16	HRUM	2	2	3	1	1	1	5	5	5	5	5	5	4	4	2	5	5	4	1	1	1	1	1	1	3
17	INDY	1	2	2	1	1	1	5	4	4	5	5	5	1	1	1	1	1	1	1	1	1	1	1	1	2
18	ITMA	1	1	1	1	1	1	5	3	1	5	4	2	5	5	4	5	5	5	1	1	1	1	1	1	3
19	ITMG	1	1	3	1	1	1	5	4	5	5	5	5	2	2	2	4	4	4	1	1	4	1	1	5	3
20	KKGI	1	1	2	4	1	1	5	5	5	5	5	5	2	3	2	4	4	4	1	1	2	1	1	1	3
21	MBAP	2	2	3	1	1	1	5	5	5	5	5	5	3	3	3	4	4	4	2	2	5	1	1	5	3
22	MYOH	1	2	2	1	1	1	5	5	5	5	5	5	3	3	4	4	5	5	2	2	2	1	1	1	3
23	PKPK	2	2	1	1	2	1	5	5	5	5	5	5	1	1	1	1	2	2	1	1	1	1	1	1	2
24	PTBA	2	2	3	1	1	1	5	5	5	5	5	5	2	2	2	3	3	3	2	1	3	1	1	3	3
25	PTRO	1	2	1	1	1	1	4	4	3	4	5	4	1	1	1	1	1	1	1	1	1	1	1	1	2
26	SMMT	1	1	2	1	1	1	2	2	5	3	2	5	2	1	3	3	3	4	1	1	3	1	1	3	2
27	TOBA	1	1	1	1	1	1	2	2	4	2	2	5	1	1	1	1	1	1	1	1	1	1	1	1	1

From the point results for all ratios, it can be concluded that of the 27 coal mining companies listed on the Indonesia Stock Exchange in 2019 – 2021, there are 9 companies that have no FD detected, 0 companies that have not been detected, and 18 companies that have had FD detected.

Table 11. Companies with FD detected.

No	FD Not Detected	Not detected	FD detected
1	BSSR		ADRO
2	BYAN		AIMS
3	HRUM		ARII
4	ITMA		BOSS
5	ITMG		BESS
6	KKGI		BRMS
7	MBAP		CNKO
8	MYOH		GOD
9	PTBA		DOID
10			DSSA
11			DWGL
12			FIRE
13			GEMS
14			INDY
15			PKPK
16			PTRO
17			SMMT
18			TOBA
	9 Companies	**0 Companies**	**18 Companies**

Companies that are detected by FD are companies that are included as companies that need to implement an early warning system, so that improvements and/or prevention need to be carried out so that their financial condition does not get worse.

CONCLUSION

Based on the results of the study it can be concluded that:

1.   In determining the detection of financial distress as an early warning system effort, indicators of the BOPO ratio, sales volume growth, liquidity ratios, leverage ratio, and profitability ratios can be used.

2.   There are 3 categories as financial distress detection, namely FD not detected, FD not detected, and FD detected.

3.   The results show that of the 27 companies there are 9 companies that are not detected by FD, meaning that the company has a good financial condition, 0 companies are not detected, meaning that the company is not known whether it is experiencing financial distress or not, usually the company is delisted , and 18 companies that are If FD is detected, it means that the company has financial problems.

However, there are limitations in this study, namely that it is necessary to conduct quantitative research by examining the variables, so that further analysis can be made regarding the relationship between the variables.

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