Does Board Diversity and Financial Ratio Predict the Risk of Financial Distress?? Evidence from Indonesia

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Abstract. COVID-19 caused the world financial crisis, as evidenced by the number of companies experiencing financial distress. This study aims to identify companies in the transportation sector experiencing the financial distress by using internal and external financial ratios and board diversity predictors. The research method used is a positivist paradigm with a comparative causal approach. Research focuses on transportation sector companies with 27 companies, five years of observation with 137 units of analysis, with a purposive sampling technique. The results showed that independent commissioners did not affect financial distress. Managerial ownership and gender diversity can reduce the risk of financial distress. Profitability and leverage have a positive effect on financial distress.

Keywords: Financial Distress · Board diversity · Profitabilitas and Leverage

1 Introduction

Johns Hopkins University reports that the global pandemic in 2019 had significant implications for human life. Business is no exception, where the company has a negative profit with the stock price falling very sharply so that the company lacks capital and accelerates bankruptcy of the company. The pandemic that spread worldwide has resulted in a global crisis and the destruction of the world's economic order [1]. COVID-19 was first announced in Indonesia on March 2, 2020, with two positive confirmed cases, then cases continued to increase namely, 3,000 people were confirmed positive, and 300 people died. So that the President of Indonesia, through the Minister of Health, established a lockdown policy by diverting all activities at home, namely work from home, learning from home and priority activities at home. The government carried out this policy to protect citizens from the pandemic and save the economy in the long term [2]. The pandemic, in general, significantly impacted the Indonesian economy. This was reflected in the capital market crash during the pandemic, which was indicated by high capital market volatility, which resulted in an average decline in the JCI of 22% and from March to April 2020, it was corrected by 37.49% [3]. This is due to panic selling due to the uncertainty of the business environment, which causes investors to tend to protect their assets from investment losses [4].

The pandemic in the last three years has caused transportation sector companies to experience financial distress. This is due to government regulations that limit the mobility of people and goods during the Covid-19 pandemic. Some companies that have a high risk of bankruptcy include; PT Sentul City Tbk, PT Global Mediacom Tbk, PT AIA Financial, PT Cowell Development Tbk, PT Emco Asset Management and PT Steadfast Marine Tbk [5]. In addition, another case is that many companies have laid off workers because they want to reduce fixed costs, such as PT Garuda Indonesia, PT Gojek, PT Traveloka, PT Express Transindo Utama and PT Lion Air Group [6]. Financial distress is a stage of declining financial condition, so the company is in a weak financial position [7]. According to [8], Financial distress is a condition where the company fails to pay its maturing debt, which causes solvency.

Assessing whether a company is included in the safe, grey and distress zone is easiest by determining the various financial ratios reported by the company in the annual financial statements. Financial ratios reflect the actual condition of the company by conducting multiple comparisons according to the appropriate proxies. Profitability ratios that continue to increase yearly will prevent the company from potential financial distress and vice versa. If the leverage ratio is smaller, the company has a high survival score because its operations are dominated by its share capital [9]. Experts continue to develop tools that can be used for early warning systems for companies with the potential to experience financial distress with various financial and non-financial variables. This model is beneficial for management to protect the company from the risk of bankruptcy and for investors to protect their assets from losses due to investments that offer zero or negative growth.

Many previous studies have developed financial distress detection using various variables that are considered capable of being predictors, namely company characteristics [10, 11], good corporate governance [12, 13], Financial Ratios [14–17]. Company characteristics can be seen from company size, company profile and product diversification that affect financial distress risk [10, 11]. Good corporate governance implemented optimally by the company will reduce the risk of financial distress [12, 13]. Financial ratios are usually used to detect financial distress. If the company has a high level of profitability, the current ratio and quick ratio will prevent the company from financial distress [14, 17].

Studies conducted [16, 18] demonstrate that good corporate governance does not affect the risk of financial distress. However, several studies find different results [19, 20], revealing that the characteristics of companies increase the risk of financial distress. Also, studies [21, 22] found that some financial ratios about profitability and leverage could not predict financial distress risk.

Based on the description of the background, phenomena, and research gaps provide an opportunity for researchers to examine the factors that can detect financial distress. The results of previous studies that still show inconsistencies in the results are motivating and enjoyable to do further research by modifying the financial ratio variable with internal and external ratios, and then this study adds gender diversity. The gender diversity variable is a novelty that distinguishes it from previous research. Gender differences in the proportion of directors will affect the company's policies, especially in conditions of environmental uncertainty or even during a recession. Finnally, this study uses a modified

Z-Score measurement to measure whether a company is experiencing financial distress and has been adjusted to non-manufacturing companies.

2 Literature Review

2.1 Signaling Theory

This study uses signal theory in predicting financial distress. Signal theory explains that management provides a signal or signal in the form of information that reflects the condition of a company that is beneficial to stakeholders [23]. In addition, [24] reveal that signal theory is used to see management's perception of future company growth, which will affect investor decisions. The signal is in the form of information that explains management's performance in realizing stakeholder desires. Signal theory builds relationships between internal ratio variables, external ratios, GCG mechanisms, earning management, internal control and financial distress.

Financial ratios in the form of high profitability and low leverage are a good signal for the company, avoid financial distress, and represent high management performance. Companies that implement good corporate governance indicate that the company has built the concept of good governance to prevent the company from financial distress. Companies that do not perform earnings management are evidence that the company's profitability is high, thereby minimizing the potential for financial distress.

2.2 Financial Distress

Financial distress is when the company's finances are in an unhealthy or critical condition due to its inability to pay its obligations [25]. Financial distress occurs due to economic failure, business failure, technical insolvency, bankruptcy, and legal bankruptcy [24]. Many countries have researched financial distress, for example studies, [13, 14, 18, 21, 26].

2.3 Financial Ratios

Assessing whether a company is included in the safe, grey and distress zone is easiest by determining the various financial ratios reported by the company in the annual financial statements. Financial ratios reflect the actual condition of the company by conducting multiple comparisons according to the appropriate proxies. Profitability ratios that continue to increase yearly will prevent the company from potential financial distress and vice versa. If the leverage ratio is smaller, the company has a high survival score because its share capital dominates its operations [27]. From various studies that have been carried out, it is revealed that financial ratios are the easiest way to detect a company's financial health [14, 16, 28].

2.4 Board Diversity

Board diversity is part of Good corporate governance (GCG). GCG is a set of rules and procedures that guarantee managers apply value-based management principles [24]. If GCG is implemented effectively and efficiently, company activities will run well, so matters relating to the company's financial and non-financial performance will also improve [29]. In addition, the full implementation of GCG will increase the company's performance through investor confidence and be able to reduce the risk of financial distress [12, 30–32].

3 Research Methods

3.1 Research Design

Prediction of financial distress in this study uses a positivist paradigm with a descriptive approach to assessing the potential for corporate bankruptcy [33]. The unit of analysis of this research is the transportation sector company from 2017 to 2021, with 135 observations. The reason for choosing a transportation company is because this sector is most affected by the Covid-19 pandemic after the financial industry. We assess whether, in a pandemic condition, the sector can survive and avoid financial distress. The sampling technique chosen was purposive sampling, with certain conditions. The criteria used are; (1) Companies listed on the IDX in the period 2017 to 2021, (2) Companies that publish complete annual reports on the IDX website or company websites, and (3) Companies that have complete data for calculating the modified Z-Score.

The data of this study were obtained from a second source in the form of company financial reports published by companies from various media. Data is collected and documented from the annual report and then analyzed using the SPSS statistical tool to test the relationship between variables and test whether the company has the potential to go bankrupt.

3.2 Variable Measurement

The study used the dependent variable; financial distress risk. The independent variable; is internal financial ratios, external ratios and board diversity, which consists of three variables: independent commissioners, managerial ownership and gender diversity. This study's financial distress risk variable was measured using the Altman Z-score model. This model can predict the condition of the company in normal and crisis situations in the non-manufacturing sector [34]. The measurement of the variables used in this study is shown in Table 1.

Data analysis used multiple linear regression to prove the relationship between research variables. This test can also predict whether a company is experiencing financial distress by using a modified z-score measurement. The regression process is carried out in two stages: the data quality test stage with the classical assumption test and then the regression test to determine the relationship between variables and the direction [33]. The analytical tool used is SPSS 24. The research model in this study is:

$$\text{FD}: \alpha + \beta_1(\text{KI})_{i,t} + \beta_2(\text{KM})_{i,t} + \beta_3(\text{GD})_{i,t} + \beta_4(\text{Prof})_{i,t} + \beta_5(\text{Lev})_{i,t} + \varepsilon$$

$$(1)$$

Table 1. Measurement of Independent Variables

Variable	Variable Measurement
Financial Distress	$Z = 1,2\ T^1 + 1,4\ T^2 + 3,3\ T^3 + 0,6\ T^4 + 0,99\ T^5$ T^1 = Net working capital/total assets T^2 = Retained earnings/total assets T^3 = EBIT/total assets T^4 = Market value of shares/total liabilities T^5 = Sales/total assets
Board Diversity	
Independent Commissioner	$\frac{Jnumberofindependentcommissioners}{Numberofcommissioners}$
Managerial Ownership	$\frac{Thenumberofsharesownedbythemanager}{Totalsharesoutstanding}$
Gender Diversity	Dummy: 1 female director and 0 male director
Financial Ratio	
Profitability	$\frac{Netprofitaftertax}{TotalAsset} x100\%$
Leverage	$\frac{TotalDebt}{Totalasset} x100\%$

where; FD categorizes whether the company is in the distress zone, grey or safe, KI explains the proportion of independent commissioners in the company structure, KM shows how managers supervise the company through share ownership, GD is a description of gender in the form of the board of directors, Prof is a reflection of company performance that assessed from the effectiveness of the use of assets, Lev is a description of the company's capital structure, β is a regression coefficient that indicates the direction of research, α is a constant and ε is an error.

4 Analysis and Discussion

Based on Table 2, most transportation sector companies experienced financial distress, namely 18 companies, five companies were in the safe zone, and four were in the grey zone.

4.1 Descriptive Statistics

Based on Table 3, the data on the independent commissioner variable has a low data distribution, as evidenced by the standard deviation value of 0.99056, which is smaller than the average value of 1.6296 and the average transportation sector company has a shallow independent board structure as evidenced by the relative mean value. The managerial ownership variable has a low data distribution with a standard deviation of 0.13673 below the average value of 0.4279, managerial ownership in the sample companies is relatively high. This will reduce agency conflict between owners and management. Gender diversity has a low distribution of data, and this is because the sample companies, on

Table 2. Company Criteria based on Z-score

No	Transportations Companies Code	Mean_Z-Score	Information
1	AKSI	0.79	Distress Zone
2	ASSA	0.71	Distress Zone
3	BIRD	0.53	Distress Zone
4	BLTA	0.58	Distress Zone
5	BPTR	10.80	Safe Zone
6	CMPP	−11.35	Distress Zone
7	DEAL	−0.73	Distress Zone
8	GIAA	−2.53	Distress Zone
9	HAIS	36.53	Safe Zone
10	HATM	0.48	Distress Zone
11	HELI	0.46	Distress Zone
12	IATA	1.75	Grey Zone
13	KJEN	−0.02	Distress Zone
14	LRNA	−0.60	Distress Zone
15	MIRA	0.19	Distress Zone
16	PPGL	1.66	Grey Zone
17	PURA	0.81	Distress Zone
18	SAFE	1.24	Grey Zone
19	SAPX	2.16	Safe Zone
20	SDMU	0.29	Distress Zone
21	SMDR	1.53	Safe Zone
22	TAXI	14.68	Safe Zone
23	TMAS	0.61	Distress Zone
24	TRJA	1.84	Safe Zone
25	TNCA	0.13	Distress Zone
26	TRUK	−0.07	Distress Zone
27	WEHA	−0.09	Distress Zone

average, have only one female director, and some companies do not have female directors. Profitability has a high data distribution, evidenced by the standard deviation value of 2.23483, above the average value of 0.3331. Over the last few years, transportation sector companies have experienced relatively small or even negative profits. The leverage variable also has a broad data distribution, as evidenced by the standard deviation value of 2.18590 above the average value of −0.1692. Then it can be concluded that the company's leverage is negative because its capital structure is dominated by debt.

Table 3. Descriptive Statistics

Variable	Minimum	Maximum	Mean	Std. Deviation
Independent Commissioner	1.00	5.00	1.6296	0.99056
Managerial ownership	0.00	0.78	0.4279	0.13673
Gender Diversity	0.00	1.00	0.3627	0.24598
Profitability	−10.74	17.22	0.3331	2.23483
Leverage	−5.45	5.57	−0.1692	2.18590
Financial Distress	−28.55	14.68	0.7744	4.16102

Table 4. Multiple linear regression test results

Variable	Beta	t-statistic	Significance	R-Square
Independent Commissioner	0.235	4.555	0.262	0.480
Managerial ownership	−0.408	0.136	0.002	
Gender Diversity	−0.791	5.505	0.015	
Profitability	0.159	0.890	0.037	
Leverage	0.186	1.001	0.031	

Finally, the financial distress variable has a high data distribution as evidenced by the standard deviation value of 4.16102 above the average value of 0.7744 and as long as the average sample company experiences financial distress in the year of observation.

4.2 Multiple Linear Regression

This study uses multiple linear analyses to determine the factors affecting financial distress. This analysis is used to assess the relationship between variables and the direction of the connection [33]. The results of the regression test are shown in Table 4.

4.2.1 Independent Commissioner

Independent commissioners have an external supervisory role in strategic policies taken by management and directors. So the more significant the proportion of independent commissioners in a company will increase supervision and be able to prevent companies from financial distress [18]. The results showed that the independent commissioner variable did not affect financial distress because it had a sig of 0.262 above 0.05. It can be concluded that independent commissioners are not the primary determinant of transportation sector companies that will avoid financial distress. Based on descriptive statistics, the average transportation sector company has a board of commissioners of 20%, this is not following what is required by the Financial Services Authority, which is at least 30%. The results of this study are in line with research conducted by [11, 22]

reporting that independent commissioners cannot reduce the risk of financial distress. The nature of independence owned by the commissioners can sometimes not reduce the risk of financial distress due to a conflict of interest. It does not have the qualifications of a board of commissioners [35]. Studies conducted by [36, 37] report that independent commissioners are often judged to be unable to exercise their independence in carrying out supervision, so the majority shareholder often dominates supervision [38].

4.2.2 Managerial ownership

Managerial ownership is the proportion of shares owned by management in the company they are managing. Managerial ownership reduces moral hazard behaviour and adverse selection resulting from information asymmetry. The results showed that managerial ownership had a negative effect on financial distress, as evidenced by the sig value of 0.002 (<0.05) and the beta coefficient of −0.408. These results explain that higher managerial ownership in the company will positively impact the company, especially in terms of supervision, to prevent the company from financial distress. The results of this study are in line with [37], which reports that high managerial ownership can improve company performance to prevent companies from financial distress. Studies [22, 26] reporting on managerial ownership can be used to align the interests of owners and management. The results of this study support the signal theory. The higher the proportion of shares owned by management, the positive signal for investors that the company has good corporate governance. As well as supporting agency theory, which can reduce agency conflict and moral hazard from management.

4.2.3 Gender Diversity

Gender diversity has a negative effect on financial distress, as evidenced by the sig value of 0.015 (<0.05). So gender becomes the primary determinant of transportation companies to minimize financial distress. This means that more women members on the risk committee make the risk committee's oversight of the risk management process more effective. Women are seen as more conscientious and conservative and tend to avoid risk [39]. Women are the right people to provide oversight to management, especially in terms of risk management. This accuracy can come from carefulness and a conservative attitude to eliminate management actions that are contrary to the interests of shareholders. Thus management does not take careless actions that can make the company experience financial distress. These results are in line with research [40]. In conclusion, the higher the gender diversity in the company, the lower the potential for financial distress.

4.2.4 Profitability

Profitability is one of the factors used to assess the company's performance so that the higher the profitability achieved. The company will avoid financial distress [14, 15, 17]. Therefore, one of the company's strategies is to reduce this risk by obtaining high profits. The results showed that profitability positively affected financial distress, as evidenced by the sig value of 0.037 (<0.05) and the beta coefficient value of −0.159. Based on table 1, 66% of companies are in the distress zone with a modified z-score calculation.

So it can be concluded that in the year of observation in the transportation sector, the company's financial distress can be minimized by increasing its profitability. In addition, companies must make efficient use of assets to increase profits. Studies [16] reveal that low or even negative profits are an early warning that the company will experience financial distress in the long term.

4.2.5 Leverage

Stakeholders can assess whether a company has good finances, one of which is by looking at the leverage ratio. This ratio can rank whether the company is in the distress zone, grey zone or safe zone. Companies that finance their business with debt tend to have the risk of distress and grey zone, on the other hand, if the company relies on share capital and relatively retained earnings in the safe zone [8, 21, 25]. The results showed that leverage positively affected financial distress, as evidenced by the sig value of 0.031 (<0.05) and the beta coefficient of 0.186. The results explain that the higher the level of leverage, the company can increase the risk of financial distress. Company is very dependent on debt, if the debt is left, it will be difficult for the company to pay it. This study's results align with [10], who reported that high leverage triggers companies to experience financial distress. Companies with a capital structure dominated by debt are significantly at risk of financial distress.

5   Conclusions

Based on the results and discussion, independent commissioners do not affect financial distress. The proportion of independent commissioners in transportation sector companies is still tiny and still needs to meet the requirements of the OJK. Managerial ownership has a negative effect on financial distress, which means that the larger the shares owned by the manager, the better the company's performance and the supervisory system, thereby reducing the potential for financial distress. Gender diversity in transportation sector companies can reduce the risk of financial distress because women are considered more careful and thorough in making decisions. Profitability increases the potential for financial distress, this is because, in the year of the study, the average company suffered losses, so 66% of companies were in the distress zone. Leverage positively affects financial distress, so the higher the capital structure dominated by debt, the higher the risk of default due to financial distress. The limitation of this study is that it has a weak r-square value of 48%, so that further research can use moderating and control variables.

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