The Effect of Financial Ratio on Financial Distress in Non-Financial Companies Listed on IDX

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ABSTRACT
The purpose of this study is to analyse variables that affect financial distress in non-financial companies listed on Indonesia Stock Exchange (IDX) for the 2018-2022 period. Independent variables used in this research are liquidity ratio, profitability ratio, leverage, and activity ratio. There are also several control variables such as sales growth and firm size, and the pandemic as a dummy variable. The dependent variable used in this research is financial distress which will be measured by the interest coverage ratio. This research uses a quantitative approach with a logistic regression model. The number of samples that meet the characteristics are 324 companies on the Indonesia Stock Exchange during the 2018-2022 period. The research results show that the current ratio, debt to equity, return on assets, and firm size have a significant effect on financial distress. Meanwhile, the variables of total asset turnover, sales growth, and pandemic do not effect on financial distress.

Keywords: *Financial distress, Liquidity ratio, Profitability ratio, Leverage, Activity ratio.*

1. INTRODUCTION

In 2020, Indonesia was faced with the Covid-19 pandemic which had a huge impact on the economic decline. The economic downturn is being felt by every level of society which is experiencing difficulties in carrying out activities. Not only that, the COVID-19 pandemic has caused many companies to experience financial difficulties because almost all activities have stopped, which can cause a decrease in consumer demand. Apart from that, economic recovery was immediately greeted by soaring inflation in Indonesia. The decline in GDP occurred in almost all economic sectors, including the processing industry, trade, construction, commerce, transportation, etc. The business fields that experienced significant contraction were Transportation and Warehousing because they experienced the largest decline, namely 13.42%. Based on a survey conducted by BPS, it was 66%. companies experienced a decline in revenue in 2020. This decline in revenue occurred as a result of layoffs and operational restrictions that occurred so that business actors experienced sales difficulties. The decline in the economy was also reflected in the IHSG in March 2020 which experienced an all-time low of IDR 3,937. This resulted in many companies experiencing The non-financial sector listed on the Indonesian Stock Exchange experienced financial difficulties. However, in fact, during the pandemic, 60% experienced a decrease in ICR. However, only 15% experienced distress, while the remaining 45% only experienced a decrease in ICR but not to the point of bankruptcy. From 2019 to 2023, IDX recorded that 13 companies experienced financial difficulties which ended in company delisting. The majority of companies that were delisted were in 2020 and 2021, during which time the global economy was in ruins. Some of the causes of company delisting include bankruptcy due to the company's unhealthy financial condition and violating or not fulfilling the requirements set by the Indonesian Stock Exchange (BEI), such as not publishing annual financial reports.

Bankruptcy of a company can be measured by analyzing financial statements. Financial ratios can be a tool for measuring a company's financial condition. Financial ratios are calculations carried out to measure company performance. Financial ratios are absolute because they are in the financial reports that must exist in every company. Financial distress can be experienced by all companies if they can't manage company finances optimally. Companies need to pay attention to cash flow balance and ensure that obligations to be paid, both short and long-term, can be guaranteed. Companies experiencing financial distress are seen in their low-interest coverage ratio (Platt & Platt, 2002). The smaller the interest coverage ratio (ICR), the smaller the company's ability to pay off its obligations. Based on this understanding, it can be estimated that the majority of company bankruptcies are due to being unable to pay company debts or interest on loans. This could be because the company has large expenses but this is not balanced by an increase in company profits. Measuring financial distress for an issuer can be a basis for investors in making decisions to invest in the long term in issuers that have good financial conditions. Apart from that, each company can measure financial

distress as a form of warning to improve its financial condition. Therefore, discussing financial distress will certainly become a very interesting topic from year to year with various approaches.

Financial distress is an indication that a company's financial condition is unhealthy. Claessens et al. (2003) share a similar understanding with Platt & Platt (2002), stating that corporate bankruptcy can be measured using the interest coverage ratio. Furthermore, a high interest coverage ratio indicates that the company is in a healthy condition, while a lower interest coverage ratio suggests that the company is experiencing financial difficulties. If the interest coverage ratio falls below 1, the company is considered to be in financial distress; if it is above 1, the company is considered healthy (Claessens et al., 2003). Liquidity ratio is an indicator to assess a company's ability to meet short-term debt that will mature within one year. Heniwati & Essen (2020) assess that the liquidity ratio can influence investor decisions because a smaller current ratio indicates that the company does not have sufficient capital to pay off short-term obligations. Meanwhile, high liquidity can indicate that the company is not optimizing existing capital for company operations, which can reduce profitability. The profitability ratio describes the company's ability to create profits or benefits. Profitability ratios that use return on assets reflect the amount of profit obtained from the amount of capital invested as company assets. That way, this can show the company's efficiency in generating profits (Antoniawati & Purwohandoko, 2022). Low return on assets can send a negative signal to investors if the company cannot maximize the use of company assets so that profitability is low. Leverage ratio tends to be used to calculate a company's ability to pay off long-term debt. The debt to equity ratio which is used as an indicator in the leverage ratio shows the comparison of the company's debt and equity. A high debt to equity ratio shows that the company uses a lot of debt in the company's activities or operations rather than using its own capital (Santosa et al., 2020). Even companies with high liquidity will not be able to pay both long-term and short-term debt because they have leverage of more than 1 (Kurniasih et al., 2020). The activity ratio describes the company's effectiveness in managing company assets. The more efficient you are in managing company assets, the more impact it will have on increasing company sales. Increased sales will automatically also increase company profits. The assets in question are inventory that can be produced to produce output, namely product sales. High total asset turnover shows that the use of company assets is optimal so that it is able to support company operations and activities (Santosa et al., 2020)

2. RESEARCH METHODS

This research uses a logistic regression model to determine the influence between the independent variable and the dependent variable. The dependent variables in this research are liquidity ratio, profitability ratio, leverage ratio and activity ratio. The control variables used in this research are sales growth and firm size. The pandemic variable is a dummy variable in this research.

$$\mathrm{Ln}\frac{\mathrm{FD}}{1-\mathrm{FD}} = \alpha + \beta 1.\mathrm{CR}_{i,t} + \beta 2.\mathrm{ROA}_{i,t} + \beta 3.\mathrm{DER}_{i,t} + \beta 4.\mathrm{TATO}_{i,t} + \beta 5.\mathrm{SG}_{i,t} + \beta 6.\mathrm{FS}_{i,t} + \beta 7.\mathrm{Pandemi} + e$$

Where: α is Constanta, β is Regression Coefficient, $\mathrm{CR}_{i,t}$ is Current Ratio company i period t, $\mathrm{ROA}_{i,t}$ is Return on Asset company i period t, $\mathrm{DER}_{i,t}$ is Debt to Equity Ratio company i period t, $\mathrm{TATO}_{i,t}$ is Total Asset Turnover company i period t, $\mathrm{SG}_{i,t}$is Sales Growth company i period t, $\mathrm{FS}_{i,t}$ is Firm Size company i period t, and e is Error.

This research has an object, namely non-financial companies listed on the Indonesia Stock Exchange (BEI) for the 2018-2022 period. There are 850 companies listed on the Indonesia Stock Exchange as of May 2023. In the first elimination, there were 107 companies consisting of financial and investment sector companies, so they were not included in the criteria. In the second elimination, there were 295 companies consisting of companies that conducted an IPO in the 2018-2023 period. In the third elimination, there were 2 companies consisting of companies that did not audit their financial reports. In the fourth elimination, there were 65 companies consisting of companies that did not release detailed financial reports. In the fifth elimination, there were 31 companies consisting of companies that did not have complete variable data. In the sixth elimination, 26 companies were companies that had negative equity and the final total of companies that could be used was 324 companies. The dependent variable financial distress uses the interest coverage ratio measurement; The independent variable liquidity ratio is proxied using the current ratio; profitability ratio is proxied using return on assets; leverage ratio is proxied using the debt-to-equity ratio; The activity ratio is proxied using total asset turnover.

3. RESEARCH RESULT AND DISCUSSIONS

Based on the results in table 3.1, the amount of data used in this research was 1620 data. Based on table 3.1, the minimum, maximum, average and standard deviation values of each variable can be seen. The first step is to carry out descriptive statistical tests using the SPSS 25.0 for Windows program. The following is a presentation of descriptive statistics for all non-financial companies listed on the Indonesia Stock Exchange for the 2018-2022 period. Descriptive Statistics is used to describe and analyze data concisely including the total amount of data for each variable, minimum value, maximum value, mean (average), and standard deviation.

Table 1 Descriptive Statistics

Variables	N	Minimum	Maximum	Mean	Std. Deviation
FD	1620	0	1	0.280	0.450
CR	1620	-0.104	207.065	2.723	7.571
ROA	1620	-17.528	32.789	.090	1.252
DER	1620	.005	149.869	1.592	4.782
TATO	1620	.000	112249.020	155.795	3605.168
SG	1620	-8.817	1585.789	1.371	40.0136
FS	1620	10.842	33.255	27.634	3.270
Pandemic	1620	0	1	0.600	0.490

The results of the multicollinearity test show that all independent and control variables have no relationship with each other. This can be seen in the tolerance value for all variables, which is greater than 0.10. Apart from that, the results of this multicollinearity test show that the VIF value is smaller than 10. Therefore, it can be concluded that the sample data is protected from multicollinearity.

Table 2. Collinearity Statistics

Variable	Tolerance	VIF
CR	0.982	1.019
ROA	0.998	1.002
DER	0.995	1.005
TATO	1.000	1.000
SG	0.999	1.001
FS	0.984	1.016
Pandemic	0.996	1.004

Logistic regression analysis does not rely on normal distribution in controlling independent variables. For this reason, there is no need to carry out classical assumption tests including normality, heteroscedasticity and autocorrelation tests on the independent variables involved in this analysis (Ghozali, 2018). Logistic regression analysis has testing prerequisites which include Model Feasibility Test (Goodness of Fit), Overall Model Fit Test, Coefficient of Determination (Nagelkerke's R Square), and Classification Matrix.

Table 3. Hypothesis Test Results

Variable	Coefficient	Sig.	Result	Hypothesis
CR	.093	.008	Significant (+)	Accept
ROA	-213.294	.000	Significant (-)	Accept
DER	.249	.000	Significant (+)	Accept
TATO	.000	.971	Insignificant	Decline
SG	-.180	.227	Insignificant	-
FS	-.212	.000	Significant (-)	-
Pandemic	.075	.799	Insignificant	-
Constant	5.281	.000		

Thus, the model obtained for financial distress is as follows:

$$\ln \frac{P}{(1-p)} = 5{,}253 + 0{,}093\text{CR} - 213{,}294\text{ROA} + 0{,}249\text{DER} + 0{,}000\text{TATO} - 0{,}180\text{SG} - 0{,}212\text{FS} + 0.075\text{Pandemi} + e$$

Goodness of fit testing needs to be carried out to assess the feasibility of the regression model. The goodness of fit test was carried out by measuring the results of the Hosmer and Lemeshow's test. The results, which use data after eliminating outliers, produce a chi square number of 1.660 and a significance of 0.990. Significance results exceeding 0.05 are acceptable. Therefore, the Hosmer and Lemeshow test value of 0.990 has exceeded 0.05, so it can be concluded that the null hypothesis is accepted because the prediction model is consistent with the data used.

Of the 1095 data that were categorized as healthy or non-distressed companies, there were 1063 data that were classified as non-distressed, namely 97.1%, while the remaining 32 data were classified as financial distress, namely 2.9%. Then, of the 364 data categorized as financial distress, it was found that 84.9%, namely 309 data were classified as financial distress and the remaining 15.1%, namely 55 data were classified as non-distress. This shows that the model has good predictive validity because the classification rate is 94%.

The liquidity ratio proxied by the Current Ratio reflects the company's ability to use its current assets to meet short-term obligations. The results of this research show that the current ratio has a positive influence on financial distress. It can be concluded that H1 is accepted, which shows that the higher the current ratio, the higher the probability of financial distress occurring. The results of this research are in line with the research of Kurniasih et al. (2020) which states that the current ratio has an effect on financial distress. The higher the CR can direct the company into a state of distress. A CR that is too high does not necessarily guarantee that the company can pay its interest expenses because there is an unprofitable proportion or distribution of current assets, such as a high amount of inventory compared to the level of sales so that inventory turnover (INTR) is low and the duration of payment of receivables is too long or the average collection period (ACP) which is too long (Murni, 2018).

The profitability ratio proxied by Return on Assets reflects the company's efficiency in creating profits from the use of its assets. The results of this research show that a high ROA can reduce the probability of financial distress. These results match the hypothesis that a high ROA indicates a company is in a healthy condition because it can increase the company's profitability. It can be concluded that H2 is accepted. The results of this research are in line with research by Dewi et al. (2022) which states that ROA influences financial distress. A high ROA can help a company avoid distress. The higher the ROA, it means the company has a high ability to create profitability. Companies with high ROA can easily pay their obligations, and the company will be better prepared to face future risks such as price fluctuations and economic changes.

Leverage proxied by the Debt to Equity Ratio shows the company's use of debt and equity in paying its obligations. The results of this research show that high DER can increase the probability of financial distress. It can be concluded that H3 is accepted. The results of this research are in line with research by Heniwati & Essen (2020) which states that DER has a positive effect on financial distress. A higher DER indicates that the company uses more debt in company activities or operations rather than using owner's or investor capital. The higher the DER, the higher the proportion of debt use compared to equity use. Companies with high DER are less flexible in dealing with market fluctuations or financial risks because they have higher debt risk and more interest payment obligations, so their level of flexibility is low.

The activity ratio proxied by Total Asset Turnover can measure a company's ability to generate income by utilizing its assets. The results of this research show that TATO has no effect on financial distress. These results do not match the hypothesis. It can be concluded that H4 is rejected. The results of this research are in line with research by Heniwati & Essen (2020) which also states that TATO has no effect on financial distress. TATO cannot be used as a reference for the cause of financial distress because even though the company has high sales, the resulting operational profit still cannot meet its obligations in paying interest, so the company can be classified as distressed. Even though there is an increase in profits, it is also accompanied by an increase in liabilities, which can reduce the company's profits.

Sales growth can measure the development or decline of sales results each year. The results of this research show that SG has no effect on financial distress. The results of this research are in line with research by Heniwati & Essen (2020) which also states that SG has no effect on financial distress. Low SG does not mean a company is in a state of distress. An increase or decrease in sales cannot be used as a determining factor in a company's financial condition. As

long as the company can still make profits, fulfill its obligations, and not experience losses, the company can avoid financial difficulties.

Firm size reflects the size of the company as measured by total assets. The results of this research show that high FS can reduce the probability of financial distress occurring. A high FS indicates the company is in a healthy condition. The results of this study are in line with research by Thim et al. (2011) and Zhafirah & Majidah (2019) which state that FS has an effect on financial distress. The larger the company, the smaller the potential for the company to experience financial distress. Companies that have a large FS benefit in many aspects such as ease in controlling the market, their large position causes sales to increase, and it is easy to expand their business.

The pandemic variable is a dummy variable used in this research. The data used in this research is from 2018 to 2022 so that in that year range there are 2 conditions, namely 2018 and 2019, which are the conditions before the pandemic. Meanwhile, 2020 to 2022 will be the conditions during the ongoing pandemic. It cannot be denied that the Covid-19 pandemic is the cause of Indonesia's economic decline. However, based on the results of this research, the pandemic variable shows that there is no significant influence on financial distress. During the period before and during the pandemic, the majority of companies were still able to maintain their ability to pay interest expenses. Therefore, the majority of sample data is in a non-distress condition, namely the ICR is still above 1 both before and during the pandemic.

4. CONCLUSIONS

This research uses logistic regression analysis with the backward elimination method. The research model shows that the current ratio has a positive influence on financial distress so that H1 is accepted. Return on assets has a negative influence on financial distress so that H2 is accepted. Debt to equity ratio has a positive influence on financial distress so that H3 is accepted. Total asset turnover has no effect on financial distress so H4 is rejected. Sales growth has no effect on financial distress. Firm size has a negative influence on financial distress. The pandemic has no effect on financial distress. Companies can pay more attention to liquidity which is reflected in the current ratio so that company operational management can be more efficient, paying attention to return on assets so that they can optimize the use of assets to generate profits. Companies can pay attention to the level of debt to equity ratio because if it is too high it can increase interest expenses and debt burdens. Apart from that, firm size must continue to be increased or maintained. Companies that are indicated as bankrupt will endanger investors. Therefore, whether a company's financial condition is healthy or unhealthy can be easily measured through several variables such as current ratio, return on assets, debt to equity ratio, and firm size. Investors will of course choose companies with healthy financial conditions so that their investments can be successful and run smoothly. This research can provide information or understanding regarding the company's financial condition and company bankruptcy with an accuracy rate of 94% so that the model from this research can be declared valid. However, this research has several shortcomings, such as being limited to financial ratios which are internal factors of the company so that it can add other external factors that can influence company bankruptcy.

REFERENCE

Antoniawati, A., & Purwohandoko, P. (2022). Analisis Pengaruh Profitabilitas, Likuiditas, Dan Leverage Terhadap Financial Distress Pada Perusahaan Transportasi Yang Terdaftar Di Bei Tahun 2018-2020. *Jurnal Ilmu Manajemen*, *10*(1), 28–38.

Claessens, S., Djankov, S., & Klapper, L. (2003). Resolution of corporate distress in East Asia. *Journal of Empirical Finance*, *10*(1–2), 199–216.

Dewi, A. S., Arianto, F., Rahim, R., & Winanda, J. (2022). Pengaruh Arus Kas, Profitabilitas Dan Leverage Terhadap Financial Distress Saat Masa Pandemi Pada Perusahaan Manufaktur Terdaftar Di BEI. *Owner: Riset Dan Jurnal Akuntansi*, *6*(3), 2887–2898. https://doi.org/https://doi.org/10.33395/owner.v6i3.968

Ghozali, I. (2018). *Aplikasi analisis multivariete SPSS 25*. Semarang: Universitas Diponegoro.

Heniwati, E., & Essen, E. (2020). Which Retail Firm Characteristics Impact On Financial Distress? *Jurnal Akuntansi Dan Keuangan*, *22*(1), 40–46. https://doi.org/10.9744/jak.22.1.40-46

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, *3*(4), 305–360. https://doi.org/https://doi.org/10.1016/0304-405X(76)90026-X

Kurniasih, A., Sumarto, A. H., Setyawasih, R., & Pujihastuti, I. (2020). DETERMINANT OF FINANCIAL DISTRESS: THE CASE OF PULP & PAPER COMPANIES REGISTERED IN INDONESIA STOCK EXCHANGE. *Jurnal Manajemen & Agribisnis*, *17*(3), 254. https://doi.org/http://dx.doi.org/10.17358/jma.17.3.254

Platt, H. D., & Platt, M. B. (2002). Predicting corporate financial distress: Reflections on choice-based sample bias. *Journal of Economics and Finance*, *26*(2), 184–199.

Ross, S. A. (1977). The determination of financial structure: the incentive-signalling approach. *The Bell Journal of Economics*, 23–40. http://links.jstor.org/sici?sici=0361-915X%28197721%298%3A1%3C23%3ATDOFST%3E2.0.CO%3B2-Q

Santosa, D. F., Anggraeni, L., & Pranowo, K. (2020). Determinan financial distress perusahaan subsektor ritel di bursa efek indonesia. *Jurnal Aplikasi Manajemen Dan Bisnis*, *6*(1), 128. https://doi.org/http://dx.doi.org/10.17358/jabm.6.1.128

Thim, C. K., Choong, Y. V., & Nee, C. S. (2011). Factors affecting financial distress: The case of Malaysian public listed firms. *Corporate Ownership and Control*, *8*(4), 345–351.

Zhafirah, A., & Majidah, M. (2019). Analisis Determinan Financial Distress (Studi Empiris Pada Perusahaan Subsektor Tekstil dan Garmen Periode 2013-2017). *Jurnal Riset Akuntansi Dan Keuangan*, *7*(1), 195–202. https://doi.org/10.17509/jrak.v7i1.15497