

## FINANCIAL RATIO ANALYSIS FOR PREDICTING FINANCIAL DISTRESS

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### ABSTRACT

This empirical study aims to analyze the financial ratios that can predict financial distress in property and real estate companies listed on the Indonesia Stock Exchange (IDX) from 2016 to 2020. The study employs a quantitative approach with multiple linear regression analysis using SPSS software. The data used in this study are secondary data obtained from the annual financial reports of the companies listed on the IDX. The study analyzes the potential for financial distress in the property and real estate sector and identifies the financial ratios that can predict financial distress. The results can provide insights for investors, regulators, and policymakers in identifying the potential for financial distress in the property and real estate sector. The study can also help companies in the sector to improve their financial performance and avoid financial distress. The study contributes to the existing literature on financial distress prediction models and provides empirical evidence on the effectiveness of financial ratios in predicting financial distress in the property and real estate sector.

### KEYWORDS

Financial Distress, Financial Ratios, Property And Real Estate Sector, Indonesia Stock Exchange, Multiple Linear Regression Analysis.



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## INTRODUCTION

The ability of economic agents to predict a company's financial condition in the future is crucial before making economic decisions. Economic agents require alternatives to increase their wealth through investments, with the capital market being a primary option after saving wealth in the form of deposits or savings accounts. Through financial reports, investors can assess a company's current and future financial condition by analyzing the information contained in these reports (Saputri & Sari, 2020).

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Financial reports, or financial statements, represent the end result of recording financial transaction activities in a company, depicting the company's financial position for a specific accounting period and providing a brief overview of a company's performance. Financial reports are information components of a company that must be disclosed to parties who require it as a form of accountability for a company's management performance. Financial reports offer insights into financial statements, cash flows, and financial performance. To make this information useful, the profit figure must be predictive, variable, and persistent ([Giovanni et al., 2020](#); [Hery, 2015](#); [Murhadi, 2013](#); [Prihadi, 2019](#)).

The recent economic conditions in Indonesia have experienced a downturn due to various factors, especially external or foreign influences. The property and real estate industry is one of the sectors that has slowed down for several periods. In the midst of economic slowdown in this sector, rising inflation has also become a problem for property and real estate businesses in Indonesia. The property and real estate sector has a significant impact on a country's economy, including Indonesia ([Prihantini & Sari, 2013](#)).

In recent years, competition among property and real estate companies has become increasingly competitive. This condition requires managers to manage their businesses effectively and appropriately to avoid bankruptcy and liquidation ([Schmuck, 2013](#)). In 2016, investments in the property and real estate sector began to show significant growth as they attracted investors, especially domestic ones. Many companies started expanding their businesses by promoting them locally to attract more investors and increase their capital. However, this situation has changed drastically due to the global pandemic that began in late 2019 ([Basuki & Prawoto, 2016](#); [Budiman, 2018](#); [Lieu et al., 2008](#)).

The pandemic has resulted in a slowdown in Indonesia's economic growth. This has had repercussions on companies in the real estate and property sub-sectors, leading to a significant decline in stock prices for various companies ([Khaliq et al., 2014](#)). Concerns have been heightened by reports of many companies suffering substantial losses due to the COVID-19 pandemic. The performance of property and real estate issuers has seen a year-on-year decrease in net income and profits of up to 60% during the first six months of 2020 ([Gujarati & Porter, 2009](#)). This trend has continued into the second semester of 2020. Declining net income, a significant drop in stock prices, and a company's inability to meet obligations or liquidity difficulties will become significant issues, affecting future financial performance ([Atmaja, 2018](#)). These issues will also have a serious impact on stakeholders such as the government, investors, and creditors. Such problems may be early indicators of financial difficulties that could potentially lead to bankruptcy.

According to [Kamal, \(2012\)](#), bankruptcy can occur in companies of various sizes due to various factors, both internal and external. Bankruptcy indicates a company's failure to generate profit from its operational activities, making it unable to sustain its business. The initial stage of a company's bankruptcy is often marked by financial distress. To address and minimize the risk of bankruptcy, companies can monitor their financial conditions using financial analysis methods. Various bankruptcy prediction tools are used as early warning systems for financial distress, as they can be employed to identify and address issues before they reach a critical

stage or lead to bankruptcy. Companies can analyze potential bankruptcy using the Altman Z-Score model to avoid or reduce the risk of bankruptcy. The Altman Z-Score analysis method was first introduced by Edward I. [Altman, \(1968\)](#), based on specific research in the United States involving public manufacturing companies. In 1984, this analytical method was revised to be applicable to private manufacturing companies that are already publicly listed. In 1995, the Altman Z-Score model was further modified to be usable by all types of companies.

The Altman Z-Score model combines five financial ratios: working capital to total assets, net income to total assets, current ratio, cash flow to total debt, and total debt to total assets, along with mathematical formulas. This combination represents accurate results for predicting a company's bankruptcy risk. Altman's research showed that if a company's bankruptcy index is 2.99 or higher, it can be concluded that the company is not at risk of bankruptcy. If the index is 1.81 or lower, the company is classified as bankrupt. The key factor in this analysis is not the size of a company, as even large or highly-rated companies can still indicate financial distress. Foreign companies can also apply this analytical method ([Amri & Aryani, 2021](#)).

Observations from the Indonesia Stock Exchange data show that the property and real estate sector has had companies delisted almost every year, especially in the period from 2010 to 2014. Companies such as New Century Development Tbk in 2011, Suryainti Permata Tbk in 2012, and Panca Wirasakti Tbk in 2013 were delisted due to high competition among property and real estate companies. Therefore, investors must be able to detect signals of financial distress within a company, indicated by financial indicators (Detikcom, 2013). Aisyah (2013) mentioned that intense competition leads to higher costs for companies. When a company loses in the competition, it incurs losses that ultimately affect its financial condition, leading to financial distress.

Furthermore, cases like Shafin Developments Limited were declared bankrupt due to high levels of debt owed to several banks in Ireland (BBC News Indonesia, 2012). Similarly, Zhejiang Xingrun Real Estate Co. went bankrupt as it did not have enough funds to repay its debt to creditors. In 2010, PT. Pelita Propertindo Sejahtera was declared bankrupt. Therefore, investors must be cautious when investing in property companies. External parties typically assess whether a company is facing financial distress by examining financial reports released by the company. These indicators can include a consistently negative profit, negative equity, and the company's failure to distribute dividends (Tempo.co, 2010).

### **Working Capital to Total Asset Ratio in Predicting Financial Stress**

This ratio shows the company's ability to generate net working capital from its total assets. This ratio is calculated by dividing net working capital by total assets. Net working capital is obtained by means of current assets minus current liabilities. Negative net working capital will most likely face problems covering its short-term liabilities due to the unavailability of sufficient current assets to cover those liabilities. Conversely, companies with positive net working capital rarely face difficulties in paying off their obligations.

**H1** : Working Capital to Total Asset (WCTA) ratio has a positive effect on predicting financial distress

### **Retained Earnings to Total Assets Ratio in Predicting Financial Stress**

This ratio shows the company's ability to generate retained earnings from the company's total assets. Retained earnings are profits that are not distributed to shareholders. In other words, retained earnings show how much of a company's earnings are not paid in dividends to shareholders. Retained earnings indicates claims against assets, not assets per shareholders' equity. Retained earnings occur because common stockholders allow the company to reinvest undistributed profits as dividends. Thus, retained earnings reported in the balance sheet do not constitute cash and are not available for payment of dividends or otherwise.

This ratio is an indicator of cumulative profitability relative to the length of time, which implies that the younger a company is, the less time it has to build cumulative profits, so the more likely it is to experience business failure. If the company starts to lose money, of course, the value of total retained earnings begins to fall. For many companies, the value of retained earnings and the ratio of X2 will be negative.

**H2** : The ratio of Retained Earnings to Total Assets (RETA) has a positive effect on predicting financial distress

### **Earning Before Interest and Tax to Total Asset Ratio in Predicting Financial Distress Conditions**

This ratio shows the company's ability to generate profits from the company's assets, before interest and tax payments. Measures profitability, which is the rate of return on assets, which is calculated by dividing the company's annual earnings before interest and tax (EBIT) by the total assets on the year-end balance sheet. This ratio can also be used as a measure of how much productivity the use of borrowed funds is. If this ratio is greater than the average interest rate paid, it means that the company is making more money than the interest on the loan. The weakening of this factor is the best indicator of the presence of bankruptcy

**H3** : The ratio of Earnings Before Interest and Tax to Total Assets (EBITTA) has a positive effect on predicting financial distress

### **Debt to Equity Ratio in Predicting Financial Stress Conditions**

The Debt to Equity ratio is used to determine the relationship between long-term debt and the amount of own capital that has been given by company owners, with the intention of knowing how much funds creditors provide with company owners. If the higher the ratio, the smaller the own capital compared to the debt. The company's policy should be to have debt that is not greater than the capital it has. Because the smaller this ratio will improve the company's condition, meaning that the smaller the debt owned, the safer it is.

A research framework needs to be created to facilitate and understand the magnitude of predicting financial distress conditions. The framework of thought in this study is as follows:

**H4** : Debt to Equity (DER) ratio has a positive effect on predicting financial distress

## RESEARCH METHOD

This type of research is quantitative, quantitative research is systematic scientific research of parts and phenomena and their relationships. In addition, researchers test established hypotheses (Sekaran & Bougie, 2016).

### Ratio Working Capital to Total Asset

Working Capital to Total Asset merupakan rasio yang mengukur likuiditas perusahaan untuk mengenali keahlian perusahaan dalam melunasi hutang jangka pendek atas peninggalan yang dimiliki perusahaan.

Berikut cara perhitungannya:

$$\text{WCTA} = \frac{\text{Current Assets} - \text{Current Liabilities}}{\text{Total Asset}}$$

### Ratio Retained Earnings to Total Asset

Retained Earnings to Total Assets is a ratio used to measure cumulative profits. This ratio is useful for measuring accumulated profits during the company's operation.

Here's how it's calculated:

$$\text{RETA} = \frac{\text{Retained Earnings}}{\text{Total Asset}}$$

### Ratio Earning Before Interest and Tax to Total Asset

Earning Before Interest and Tax to Total Asset is a ratio that measures the productivity of company assets. This ratio assesses the company's ability to generate profit from the assets used within the company. Here's how it's calculated:

$$\text{EBITTA} = \frac{\text{Earnings Before Interest Tax}}{\text{Total Asset}}$$

### Ratio Debt to Equity

Debt to Equity Ratio (DER) is a measure of the percentage of liabilities in a company's capital structure. This ratio is important to measure the company's business risk which is increasing with the addition of the number of liabilities. Here's how it's calculated:

$$\text{Debt to Equity} = \frac{\text{Total Utang (Liabilities)}}{\text{Ekuitas (Equity)}}$$

**Financial distress**

Financial distress is a condition where the company experiences financial difficulties. The dependent variable in this study is Financial distress which is proxied by the Z-Score analysis method.

Here's how it's calculated:

$$Z'' = 6,56X1 + 3,26X2 + 6,72X3 + 1,05X4$$

The population in this study is 78 Property and Real estate Companies listed on the Indonesia Stock Exchange (IDX). The population to be used as a research sample is a population that meets certain sample criteria. The sampling technique in this study is using the purposive sampling method. So a sample of 37 companies was obtained (Tong & Serrasqueiro, 2021).

**RESULT AND DISCUSSION**

**A. Descriptive Research Results**

According to (Sugiyono, 2019) In descriptive statistics, among others, is the presentation of data through tables, graphs, pie charts, pictograms, mode calculations, medians, mean (measurement of central tendency), decile calculations, percentiles, percentage calculations. In descriptive statistics can also be done looking for strong relationships between variables through correlation analysis, making predictions with regression analysis, and making comparisons by comparing the average of sample or population data. Here are the results of descriptive statistics:

**Tabel 1. Hasil Statistik Deskriptif**

	Y	X1	X2	X3	X4
Mean	3.096919	0.231189	0.230973	0.020432	0.652432
Median	3.360000	0.180000	0.180000	0.010000	0.510000
Maximum	7.520000	0.880000	0.870000	0.260000	3.700000
Minimum	-10.40000	-0.470000	-0.450000	-0.370000	-10.26000
Std. Dev.	2.181625	0.242415	0.278052	0.061678	1.048626
Skewness	-1.391182	0.644434	0.356825	-0.791120	-5.589867
Kurtosis	9.648166	3.133372	2.938017	12.98297	65.37992
Jarque-Bera	400.3682	12.94207	3.955438	787.5081	30958.52
Probability	0.000000	0.001548	0.138385	0.000000	0.000000
Sum	572.9300	42.77000	42.73000	3.780000	120.7000

Sum	Sq.					
Dev.	875.7455	10.81274	14.22562	0.699965	202.3296	
Observations	185	185	185	185	185	

Source: Data processed with Eviews 10, 2022

- a. The Z-Score variable as a predictor of financial distress over five years has a mean value of 3.096. This indicates that, on average, companies in the property sector are in a non-distress condition. The higher the Z-Score, the more likely a company is to avoid financial distress. The maximum value is 7.52, held by Lippo Cikarang Tbk (LPCK). This means that LPCK is classified as a safe (non-distress) area. The minimum value is -10.40, held by Binakarya Jaya Abadi Tbk (BIKA), indicating that BIKa is classified as an unsafe (distress) area.
- b. The Working Capital to Total Asset (WCTA) variable has a mean value of 0.23, which is above 0 and below 1. This value can be interpreted as not good because companies in the property sector have relatively low working capital. The higher the working capital value, the better. The maximum value is 0.88, held by Eureka Prima Jakarta Tbk (LCGP). The minimum value is -0.47, held by Modernland Realty Tbk (MDLN).
- c. The Retained Earnings to Total Asset (RETA) variable has a mean value of 0.23. This value suggests that companies in the property sector are unable to generate retained earnings as expected. A smaller value for this ratio can affect a company's ability to generate assets from retained earnings management. The maximum value is 0.87, held by Roda Vivatex Tbk (RDTX). The minimum value is -0.45, held by Bukit Darmo Properti Tbk (BKDP).
- d. The EBIT to Total Asset (EBITTA) variable has a mean value of 0.02. This value suggests that the management is not effectively managing its assets. The higher this ratio, the better a company's performance in asset utilization. The maximum value is 0.26, held by Indonesian Paradise Property Tbk (INPP). The minimum value is -0.37, held by Lippo Cikarang Tbk (LPCK).
- e. The Debt to Equity (DER) variable has a mean value of 0.65. This value suggests that the source of a company's capital is more equity-based than debt-based. The maximum value is 3.70, held by Plaza Indonesia Realty Tbk (PLIN). The minimum value is -10.26, held by Binakarya Jaya Abadi Tbk (BIKA) (Ross, 2015; Sari & Wuryanti, 2017).

## B. Panel Data Regression Results

### 1. Results of the Best Panel Data Regression Estimation Model Selection Method

#### a. Chow Test

In the first model selection, to test whether the right model is the Common Effect Model or Fixed Effect Model, the Chow test is used, the results obtained from the Common Effect Model are then compared with the Fixed Effect Model, if the value of Probability Cross-section  $F > 0.05$  then the Common Effect The model to be used and if the Probability Cross-section  $F$  value  $< 0.05$  then the Fixed

Effect Model is used as a regression model (Ghozali, 2016). The results of the Chow test conducted in the study can be seen in the Figure below

**Table 2. Chow Test Results**

Redundant Fixed Effects Tests			
Equation: FEM			
Test cross-section fixed effects			
Effects Test	Statistic	d.f.	Prob.
Cross-section F	3.175532	(36,144)	0.0000
	108.11076		
Cross-section Chi-square	8	36	0.0000

Source: Data processed with Eviews 10, 2022

Based on the picture above, the results of the Chow test above can be concluded that the value of the Probability Cross-section F is 0.0000 so that H0 is rejected and H1 is accepted with the number of Probability Cross-section F < 0.05, then in this Chow Test the selected model is using the Fixed Effect Model.

#### b. Hausman Test

Furthermore, testing is carried out using the Hausman Test to determine whether the selected model is a Random Effect Model or using a Fixed Effect Model. If the Probability Cross-section Random value > 0.05 then the Random Effect Model is selected and if the Probability Cross-section Random value < 0.05 then the Fixed Effect Model is used as the regression model.

**Table 3. Hausman Test Results**

Correlated Random Effects - Hausman Test			
Equation: REM			
Test cross-section random effects			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	8.417023	4	0.0774

Source: Data processed with Eviews 10, 2022

Based on the picture above, the results of the Hausman Test above can be concluded that the value of the Random Probability Cross-section is 0.0774 so that it is concluded that H0 is accepted and H1 is rejected with a Random Cross-section Probability number of > 0.05, then in the Hausman Test the selected model is the Random Effect Model.

#### c. Lagrange Multiplier Test

Furthermore, the Lagrange Multiplier Test is carried out to determine whether the model used is the Common Effect Model or the Random Effect Model, if the value of Both Breusch-Pagan > 0.05 then the Common Effect Model is used and if the value of Both Breusch-Pagan < 0.05 then the Random Effect Model will be used as a regression model.



**Table 4. Lagrange Multiplier Results**

Lagrange multiplier (LM) test for panel data			
Date: 02/11/23 Time: 16:02			
Sample: 2016 2020			
Total panel observations: 185			
Probability in ()			
Null (no rand. effect) Alternative	Cross-section One-sided	Period One-sided	Both
Breusch-Pagan	26.75237 (0.0000)	0.224998 (0.6353)	26.97737 (0.0000)
Honda	5.172269 (0.0000)	-0.474340 (0.6824)	3.321938 (0.0004)
King-Wu	5.172269 (0.0000)	-0.474340 (0.6824)	1.185617 (0.1179)
GHM	--	--	26.75237 (0.0000)

Source: Data processed with Eviews 10, 2022

Based on the picture above results of the Lagrange Multiplier Test above, it can be concluded that the value of Both Breusch-Pagan is 0.0000 so that it is concluded that H0 is rejected and H1 is accepted with the number Both Breusch-Pagan < 0.05, then in the Lagrange Multiplier Test the selected model is the Random Effect Model.

**d. Panel Data Regression Estimation Results**

In the analysis of panel data regression model estimation, there are 3 regression model approaches, namely the Common Effect Model approach, Fixed Effect Model, and Random Effect Model. To determine the choice of expected estimation model, it is necessary to select a panel data regression model.

**Tabel 5. Hasil Regresi Data Panel**

Test	Test Criteria	Significance	Result
Chow	Cross-section Chi square	0,0000	Fixed Effect
Hausman	Cross-section Random	0,0774	Random Effect
Lagrange Multiplier	Breush-Pagan	0,0000	Random Effect

Source : Data processed with Eviews 10, 2022

Based on table 5 of the best panel model test results, it is known that the random effect is the best model, because the probability value of the chi-square cross-section is below (< 0.05), so choose the Random Effect. It can be concluded the results of the Financial Ratio Analysis test to predict Financial Distress, using a random effect approach.

**e. Classical Assumption Test Results**

According to (Iqbal, 2015) There are several considerations used in determining what classical assumption tests are used in panel data regression models:

1. Linearity tests are hardly performed on every linear regression model because it has been assumed that they are linear.
2. Autocorrelation testing only occurs on time series data, therefore autocorrelation testing on cross-section data or panel data is not required.
3. Multicollinearity tests need to be performed when linear regression uses more than one independent variable.
4. Heteroscedasticity tests usually occur in cross-section data, where panel data is closer to self-cross-section data in time series data, so this test needs to be done.
5. The Normality Test is basically not a BLUE (Best Linear Unbias Estimator) condition so in linear regression models it is not required to meet this condition.

Based on some of the descriptions above, the classical assumption test of panel data regression that researchers will do in this study is the Multicollinearity Test and the Heterokedasticity Test.

### 1. Multicollinearity Test

In this study, multicollinearity testing used the partial correlation method between independent variables. The results of the multicollinearity test are as follows:

**Table 6. Multicollinearity Test Results**

	X1	X2	X3	X4
X1	1.000000	-0.028045	-0.030536	0.004045
X2	-0.028045	1.000000	0.459309	-0.099995
X3	-0.030536	0.459309	1.000000	-0.014948
X4	0.004045	-0.099995	-0.014948	1.000000

Source: Data processed with Eviews 10, 2022

Based on Table 6, the result of the correlation coefficient value between variables, low, which is below 0.8. Based on the results, it was concluded that there was no multicollinearity problem in the model used.

### 2. Heterokedasticity Test

Heterokedasticity test to determine the presence or absence of deviations from classical assumptions. Heteroscedasticity is the inequality of variance of residuals for all observations in the regression model. A prerequisite that must be met in the regression model is the absence of symptoms of heteroscedasticity. If the prob value is  $< 0.05$ , heteroscedasticity symptoms occur in the research model, while if the prob value is  $> 0.05$ , heteroscedasticity symptoms do not occur in the research model.

**Table 7. Heterokedasticity Test Results**

Heteroskedasticity Test: White			
F-statistic	4.170006	Prob. F(14,170)	0.7046
Obs*R-squared	47.29097	Prob. Chi-Square(14)	0.5975

Scaled explained SS	46.45969	Prob. Square(14)	Chi- 0.6157
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Source: Data processed with Eviews 10, 2022

Based on table 7, the results of the Prob value are obtained. Chi-Square  $0.5975 > 0.05$ . Based on the results, it was concluded that there were no symptoms of heterokedasticity in the model used.

#### f. Hypothesis Test Result

Hypothesis testing is performed using hypothesis testing with F test, T test and R2 test. So the next thing that is done in the hypothesis test is to look at the value of determination (R2) to determine the magnitude of the influence of the variation of the independent variable which will explain the dependent variable and perform a t-test and F test to find out whether the independent variable in the regression model has an influence on the dependent variable either partially or simultaneously.

##### 1. F Test

**Table 8. F Test Results**

R-squared	0.999995	Mean dependent var	1.769098
Adjusted R-squared	0.999995	S.D. dependent var	1.665126
S.E. of regression	0.003669	Sum squared resid	0.002423
F-statistic	9475450.	Durbin-Watson stat	1.824106
Prob(F-statistic)	0.000000		

Source: Data processed with Eviews 10, 2022

Test F is carried out to find out whether the regression model in this study is appropriate or not. The results of the F test as shown in table 8 show that the Prob (F-Statistics) value for table 4.8 is 0.00000 which means smaller than the significant level of 0.05 means that the panel data regression model used in this study is appropriate and can be done.

##### 2. T Test

The statistical test t is performed to see whether the independent variable individually has a significant impact on the dependent variable, as well as to prove which variable is more dominant, the results of the statistical test t can be seen in table 9 of the statistical test results t.

**Table 9. T Test Results**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.002665	0.000731	3.646633	0.0003
X1	6.564343	0.001736	3780.781	0.0000
X2	3.262985	0.001714	1903.696	0.0000
X3	6.748108	0.005433	1242.023	0.0000
X4	1.050374	0.000281	3732.158	0.0000

Source: Data processed with Eviews 10, 2022

1. Based on the results of the study, the coefficient value for the Working Capital to Total Asset (WCTA) variable is 6.564343 which means it moves positively and the profitability value of 0.0000 is smaller than 0.05 so that it can be concluded that the Working Capital to Total Asset (WCTA) variable, has a significant positive effect on the Z-Score value as a prediction of financial distress property sector companies listed on the Indonesia Stock Exchange in 2016-2020. Thus the first hypothesis (H1) is accepted.
2. Based on the results of the study, the coefficient value for the variable Retained Earnings to Total Asset (RETA), amounted to 3.262985 which means it moves positively and the profitability value of 0.0000 is smaller than 0.05 so that it can be concluded that the variable Retained Earnings to Total Asset (RETA) has a significant positive effect on the value of Z-Score as a prediction of financial distress property sector companies listed on the Indonesia Stock Exchange in 2016-2020. Thus the second hypothesis (H2) is accepted.
3. Based on the results of the study, the coefficient value for the EBIT to Total Asset (EBITTA) variable is 6.748108 which means it moves positively and the profitability value of 0.0000 is smaller than 0.05, so it can be concluded that the EBIT to Total Asset (EBITTA) variable has a significant positive effect on the Z-Score value as a prediction of financial distress property sector companies listed on the Indonesia Stock Exchange in 2016-2020. Thus the third hypothesis (H3) is accepted.
4. Based on the results of the study, the coefficient value for the Debt to Equity (DER) variable is 1.050374 which means it moves positively and the profitability value of 0.0000 is smaller than 0.05 so that it can be concluded that the Debt to Equity (DER) variable has a significant positive effect on the Z-Score value as a prediction of financial distress property sector companies listed on the Indonesia Stock Exchange in 2016-2020. Thus the fourth hypothesis (H4) is accepted.

### 3. R<sup>2</sup> Test

The determination coefficient test is carried out to determine how much the ability of the independent variable model to explain the dependent variable. The results of the R<sup>2</sup> Test can be seen below:

**Table 10. R<sup>2</sup> Test Results**

R-squared	0.999995	Mean dependent var	1.769098
Adjusted R-squared	0.999995	S.D. dependent var	1.665126
S.E. of regression	0.003669	Sum squared resid	0.002423
F-statistic	9475450.	Durbin-Watson stat	1.824106
Prob(F-statistic)	0.000000		

Based on table 10, it shows an Adjusted R-square value of 0.999995 or 99.95%. This means that the dependent variable of financial distress can be explained by independent variables, namely Working Capital to Total Asset (WCTA), Retained Earnings to Total Asset (RETA), EBIT to Total Asset (EBITTA), Debt to Equity (DER) of 99.95% while the rest is explained by other factors that were not studied in this study.

#### **g. Pembahasan Hasil Penelitian**

Based on the research conducted on four independent variables, namely Working Capital to Total Asset (WCTA), Retained Earnings to Total Asset (RETA), EBIT to Total Asset (EBITTA), and Debt to Equity (DER), with the dependent variable being financial distress, the research results are as follows:

1. The influence of Working Capital to Total Asset (X1) on the Z-Score value as a predictor of financial distress: The Working Capital to Total Asset (WCTA) variable has a significant positive effect on the Z-Score value as a predictor of financial distress. This result supports the Signaling theory's implication, which suggests that the higher the value of Working Capital to Total Asset, the more a company is protected from the symptoms of financial distress. This is because the company can generate sufficient working capital, which allows it to cover short-term obligations, finance its day-to-day operations, operate economically and efficiently, and avoid financial difficulties due to the availability of sufficient current assets to cover all expenses.
2. The influence of Retained Earnings to Total Asset (X2) on the Z-Score value as a predictor of financial distress: The Retained Earnings to Total Asset (RETA) variable has a significant positive effect on the Z-Score value as a predictor of financial distress. This result supports the Signaling theory's implication, indicating that a higher value of the Retained Earnings to Total Asset (RETA) variable reflects a better company's condition because it can generate profits and accumulate retained earnings.
3. The influence of EBIT to Total Asset (X3) on the Z-Score value as a predictor of financial distress: The EBIT to Total Asset (EBITTA) variable has a significant positive effect on the Z-Score value as a predictor of financial distress. This result supports the Signaling theory's implication, stating that a high EBITTA value indicates that the company can generate operating profits effectively. Operating profit is used as a measure of a company's productivity in managing its total assets. The better the asset management, the better the company's productivity in generating operating profits to cover other expenses besides its operating costs. A larger operating profit is advantageous for investors when assessing a company's profitability in their investments because a productive company can generate profits. Therefore, it will be good news for investors to invest in the company's shares, leading to an increase in the investment value.
4. The influence of Debt to Equity (X4) on the Z-Score value as a predictor of financial distress: The Debt to Equity (DER) variable has a significant positive effect on the Z-Score value as a predictor of financial distress. This result supports the Signaling theory's implication, stating that a high debt-to-equity ratio is not always negative. The positive effect of Debt to Equity (DER)

means that a high DER ratio will affect a company's financial distress. Companies, in their business and operational activities, rely on debt to continue operating and expand their business. However, they must efficiently manage their debt and capital. From the positive regression coefficient, it is evident that if the DER ratio is high, the company is more vulnerable to financial distress. This is observed in the property companies during the period before COVID-19 in 2019 when the DER ratio was 0.664, and it increased to 0.966 in 2020. This was due to the economic downturn during the pandemic, and the operational costs of the company remained steady or increased, resulting in a larger total debt compared to the company's capital. This debt burden could potentially reduce profits and lead to financial distress.

### CONCLUSION

From this study, it can be concluded that the study aims to predict financial distress conditions with financial ratios with the number of samples used as many as 37 can be concluded as follows: (1) working capital to total assets has a significant positive effect on the Z-Score value as a prediction of financial distress, meaning that property and real estate companies listed on the Indonesia Stock Exchange in 2016-2020 have sufficient working capital so that the company operate economically and have no difficulty in dealing with dangers arising from financial crises or turmoil, (2) retained earnings to total assets have a significant positive effect on the Z-Score value as a prediction of financial distress, meaning that property and real estate companies listed on the Indonesia Stock Exchange in 2016-2020 are able to generate profits and accumulate retained earnings, (3) EBIT to total assets have a significant positive effect on the Z-Score value as a prediction of financial distress, meaning that property and real estate companies listed on the Indonesia Stock Exchange in 2016-2020 are able to utilize their assets rationally so that profits can be generated and reduce the possibility of financial distress, and (4) the DER variable has a significant positive effect on the Z-Score value as a prediction of financial distress, meaning that property and real estate companies listed on the Indonesia Stock Exchange in 2016-2020 are able to pay off corporate debt without having to sacrifice too much of the interests of capital owners.

### REFERENCES

- [Altman, E. I. \(1968\)](#). Financial ratios, discriminant analysis and the prediction of corporate bankruptcy. *The Journal of Finance*, 23(4), 589–609.
- [Amri, M. C., & Aryani, Y. A. \(2021\)](#). Empirical Evidence of Financial Distress in Indonesia. *Assets: Jurnal Akuntansi Dan Pendidikan*, 10(2), 165–179.
- [Atmaja, J. \(2018\)](#). Kualitas pelayanan dan kepuasan nasabah terhadap loyalitas pada bank BJB. *Jurnal Ecodemica*, 2(1), 49–63.
- [Basuki, A. T., & Prawoto, N. \(2016\)](#). *Analisis regresi dalam penelitian ekonomi dan bisnis*.
- [Budiman, R. \(2018\)](#). *Rahasia Analisis Fundamental Saham*. Elex media komputindo.
- [Ghozali, I. \(2016\)](#). *Aplikasi analisis multivariete dengan program IBM SPSS 23*.

- Giovanni, A., Utami, D. W., & Yuzevin, T. (2020). Leverage dan profitabilitas dalam memprediksi financial distress perusahaan pertambangan periode 2016-2018. *Journal of Business and Banking*, 10(1), 151–167.
- Gujarati, D. N., & Porter, D. C. (2009). Basic econometrics. McGrawHill/Irwin. New York.
- Hery, S. E. (2015). Analisis laporan keuangan. Media Pressindo.
- Iqbal, M. (2015). Regresi Data Panel (2) “Tahap Analisis.” <http://dosen.perbanasinstitute.ac.id>
- KAMAL, ST. I. M. (2012). Analisis Prediksi Kebangkrutan Pada Perusahaan Perbankan Go Public Di Bursa Efek Indonesia. *Universitas Hasanuddin*, 6(1), 1–116.
- Khaliq, A., Hussein, B., Altarturi, M., Mohd, H., Thaker, T., Harun, M. Y., & Nahar, N. (2014). Former Investment Analyst at IDLC Investments Ltd in Bangladesh 5 MSc. Finance, International Islamic University Malaysia (IIUM). *International Journal of Economics, Finance and Management*, 3(3), 141–150.
- Lieu, P., Lin, C., & Yu, H. (2008). Financial early-warning models on cross-holding groups. *Industrial Management & Data Systems*, 108(8), 1060–1080.
- Murhadi, W. R. (2013). Analisis laporan keuangan: proyeksi dan valuasi saham. Salemba Empat.
- Prihadi, T. (2019). Analisis laporan keuangan. Gramedia Pustaka Utama.
- Prihantini, N., & Sari, M. M. R. (2013). Prediksi Kebangkrutan Dengan Model Grover, Altman Z-Score, Springate Dan Zmijewski Pada Perusahaan Food And Beverage Di Bursa Efek Indonesia. *E-Jurnal Akuntansi Universitas Udayana*, 5(2), 417–435.
- Ross, S. (2015). The recovery theorem. *The Journal of Finance*, 70(2), 615–648.
- Saputri, D., & Sari, G. P. (2020). Pengaruh persistensi laba, free cash flow dan komponen-komponen akrual terhadap arus kas dari aktivitas operasi masa depan. *Jurnal Akuntansi Keuangan Dan Manajemen*, 1(2). <https://doi.org/10.35912/jakman.v1i2.10>
- Sari, L., & Wuryanti, L. (2017). pengaruh working capital to total assets, debt to equity ratio, total asset turnover dan net profit margin terhadap pertumbuhan laba pada pt bukit asam (persero) tbk periode 2009-2014. *Jurnal Riset Akuntansi Dan Manajemen*, 6(1), 56–66.
- Schmuck, M. (2013). Financial distress and corporate turnaround: an empirical analysis of the automotive supplier industry. Springer Science & Business Media.
- Sekaran, U., & Bougie, R. (2016). Research methods for business: A skill building approach. John Wiley & Sons.
- Sugiyono. (2019). Metode penelitian pendidikan : kuantitatif, kualitatif, kombinasi, R&D dan penelitian tindakan / Prof. Dr. Sugiyono. Bandung: Alfabeta, 17.
- Tong, Y., & Serrasqueiro, Z. (2021). Predictions of failure and financial distress: A study on Portuguese high and medium-high technology small and midsized enterprises. *Journal of International Studies (2071-8330)*, 14(2).

