

THE EFFECT OF FINANCIAL RATIOS TO FINANCIAL DISTRESS USING ALTMAN Z SCORE ON HOTEL AND TOURISM COMPANIES LISTED IN INDONESIAN STOCK EXCHANGE

PENGARUH RASIO KEUANGAN TERHADAP KESULITAN KEUANGAN MENGGUNAKAN ALTMAN Z SCORE PADA PERUSAHAAN PERHOTELAN DAN PARIWISATA YANG TERDAFTAR DI BURSA EFEK INDONESIA

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Abstract: Financial Ratios is one of the important factors to measure the health of a company. The purpose of this research is to find out the effects of financial ratios to financial distress Altman Z score. This research conducted by taking 16 samples from hotel and tourism companies listed in Indonesian stock exchange, with the period year from 2015 to 2020 with 102 data observations. The variables used in this research is return on assets (ROA), Debt to equity Ratio (DER), and Current Ratio (CR), and Altman Z score-the result shows that debt to equity ratio has a negative Significant Effect on Z score financial distress method; Return on Asset and Current Ratio has a positive and significant Effect on z score financial distress method. While the three variables show simultaneously effect on financial distress prediction model, through the findings of Altman z score method on hotel and tourism companies listed in Indonesian stock exchange shows the financial condition of companies in the tourism and hotel has worsened of the year especially in the year of 2020 due to covid. The sample is small and consequently, findings may not be generatable to the population.

Keywords: Financial ratios, financial distress, Altman Z score

Abstrak: Rasio keuangan adalah salah satu faktor penting untuk mengukur kesehatan perusahaan. Tujuan penelitian ini adalah untuk mengetahui pengaruh dari rasio keuangan terhadap kesulitan keuangan menggunakan altman z score. Penelitian ini dilakukan dengan mengambil 16 sampel dari perusahaan perhotelan dan pariwisata yang terdaftar di bursa efek Indonesia periode 2015 sampai 2020 dengan 102 data observasi. Variable yang digunakan dalam penelitian ini adalah return on assets, debt to equity ratio, dan current ratio, dan altman z score. Hasil menunjukkan bahwa debt to equity ratio memiliki signifikan negative terhadap z score dan Roa dan current ratio memiliki signifikan positif terhadap z score. Sementara 3 variable ini secara bersama mempengaruhi z score. Berdasarkan hasil dari altman z score pada perusahaan hotel dan pariwisata, ditemukan bahwa kondisi keuangan perusahaan memburuk terlebih khusus di tahun 2020. Sampel penelitian kecil dan akibatnya temuan mungkin tidak dapat di samakan terhadap populasi.

Kata Kunci: Rasio keuangan, kesulitan keuangan, Altman Z score

INTRODUCTION

Research Background

Declining of the foreign exchange distribution by the tourism sector along with the declining of the worker shows the problem that the tourism sector facing today's can lead to the unproductivity of the companies, a decrease of whether the company is able to move in the tourism sector in maintaining financial viability of the company, whether it affects the continuity of the company or even going to make the company bankrupt. At this time various efforts have been made by the government to increase economic productivity in Indonesia, especially improving

the tourism industry because tourism has a very important role in economic development in Indonesia, therefore to prevent falling or experiencing financial distress it is necessary to predict bankruptcy.

There are many models or techniques that can be used in predicting potential bankruptcies. Financial ratios are one of the information that can be used as a tool to predict company performance. Ratio analysis is an analysis that is often used in assessing the company's financial performance, but the ratio analysis showing only one aspect without being able to associate with other aspects. Each ratio has a usability and provide an indication of the different information regarding the company's financial health, the ratio sometimes conflicting with each other. To complete the lack of analysis of the ratio analysis tools it is needed an analysis model that can connect multiple ratios at once, namely Z score.

The Z score demonstrate has gotten to be a model for numerous of these models. Resource directors and speculators require dependable apparatuses that can offer assistance them select suitable companies for their portfolios. Financial distress is negative to financial specialist returns, but chance may give openings for tall returns on short-sale procedures. Rating offices evaluate the chance of the substance and of securities issues, and hence, they require a device to anticipate default. Altman (1983) propose that the administration of troubled firms can utilize the Z score demonstrate as a direct to monetary turn around. One of the techniques that can be used in the analysis of company bankruptcy is to use discriminant analysis, namely using a model that is assessed (Z) Z score, because the Z score has been widely used as a reference in predicting business bankruptcy. Z score is a score that is determined from the level of possibility of company bankruptcy.

Research Objective

The objective that are going to achieve in this study is to find the effect of financial ratios towards the financial distress model on hotel and tourism companies listed on Indonesia stock exchange.

THEORITICAL FRAMEWORK

Financial distress

Financial distress is a financial condition of a corporation that encounter an inability to pay short-term obligations. However, on a long-term projection, it is still considered to be able to pay long-term obligations. The starting arrange of bankruptcy is financial distress in this case this introductory organize cannot be settled, it will end in bankruptcy.

Financial Statement

According to Hanafi and Halim (2005), financial statement relies heavily the information provided by the company's financial statements. Company's financial statement is an important source of information in addition to other information.

Financial Ratio

Financial ratio is the items to breakdown the financial statement into smaller units of information and see the relationship that is significant or that has meaning between one another, both quantitative and non-quantitative data with the aim knowing more which is very important in the process of producing the right decisions (Harahap, 2009).

Return on Asset

The importance of return on assets as a measure of the firm performance is recognized in the specialized literature. Thus, Lindo (2008) believes that "Return on Assets (ROA) is the general-purpose financial ratio used to measure the relationship of profit earned to the investment in assets required to earn that profit The ROA percent is a baseline that can be used to measure the profit contribution required from new investments.

Debt to Equity

According to Darsono and Ashari (2010), "Debt to Equity Ratio (DER) is one of the leverage or solvency ratios. Solvency ratio is the ratio to find out the company's ability to pay liabilities if the company is liquidated. This ratio is also referred to as the leverage ratio (Leverage), which is assessing the limits of the company in borrowing money.

Current Ratio

Kasmir (2014) states that "Current ratio is a ratio to measure the ability of companies to pay short-term liabilities or debt that are due immediately when billed as a whole". In other words, how much current assets are available to cover short-term liabilities that are immediately due.

Previous Research

Desiyanti et al. (2019) aimed to find out the effect of the Financial Ratios on Financial Distress using the Z-Score Altman method. This paper uses data from 21 property and real estate companies listed in BEI period 2014-2018 with 105 data observations. The variables used are ROE (Return On Equity), DER (Debt to Equity Ratio), CR (Current Ratio), WCR (Working Capital Ratio) and Z-Score. The results show that ROE and WCR have a significant positive effect on Z-Score Altman's financial distress; DER and CR have a significant negative effect on Z-Score Altman's financial distress. While simultaneously shows that at least one variable has a significant effect on Z-Score Altman financial distress. The financial condition of companies in the real estate sector has worsened over the years, marked by the increasing number of companies that were in financial distress from 5 companies in 2014 to 9 companies in 2018. Likewise, companies in the financial condition of gray areas from 8 companies in 2014 became nine companies in 2018, while companies with a healthy financial condition decreased from 8 companies in 2014 to 3 companies in 2018.

Riwoe and Winarto (2017) aimed to predict bankruptcy on PT. Bumi Resources Minerals Tbk. This Analysis used the financial report data of PT. Bumi Resources Minerals Tbk. from the year 2010 – 2014 using the Altman's Z-Score modified and cash flow patterns. The Altman's Z-Score using some ratio as: Working Capital to Total Assets, Retained Earnings to Total Assets, Earnings Before Interest and Taxes to Total Assets, and Market Value of Equity to Total Asset. This approach developed to find a bankruptcy model namely Z-Score Modified that is one of the strong model in predict organization bankruptcy level. The results of the analysis of Altman's Z-Score shows that in 2010 companies in the healthy zone, but there is a signal of financial trouble in the future because of the restrictions on the use of cash. In 2011 the company entered into the gray zone and then in 2012 to 2014 the company is in bankruptcy zones. Analysis Altman's Z-Score is strengthened by the cash flow pattern analysis showed that from 2010 to 2014, the net cash flow from operating activities continued deficit. Operating cash deficit resulted in the company failing to pay short-term debt, which is very minimal cash availability by 1% compared with short-term debt and stagnant operating activities for cash at the level fixed in 2013 and 2014. This indicator shows that the company is at the very financial difficulties or bankruptcy.

Kurniawan (2018) examined: (1) The Influence of Altman Z-Score as a means of a prediction of potential bankruptcy on the stock price, (2) The Influence of Springate S-Score as a means of a prediction of potential bankruptcy on the stock price, (3) The Influence of Altman Z-Score and Springate S-Score as a means of a prediction of potential bankruptcy on the stock price. The data were collected by the study documentation and literature were based from data publication firms of financial statement listed on BEI. The Sample used in this research was financial report of coal firms listed on Indonesia Stock Exchange period 2013-2015, there are 18 firms that had met the criteria of the sample collection research. The Method of the research is Modified Altman Z-Score prediction of bankruptcy and Springate S-Score. The ratio of financial with Altman Z-Score and Springate S-Score that is used is working capital to total asset, retained earnings to total asset, earnings before interest and taxes to total asset, book value of equity to book value of total debt, net profit before taxes to current liabilities, and sales to total assets. Technique used in this research is the assumption classical test, simple linear regression and other hypothesis test instrument. Results of this study indicate that: (1) Altman Z-Score have significant positive effect on the stock price 50%; (2) Springate S-Score have significant positive effect on the stock price 20%; (3) Altman Z-Score and Springate S-Score have significant on the stock price. Based on the results of Altman Z-Score, in 2015 there are 27% was condition bankruptcy, 22% grey area, and 50% in unbankruptcy and then Springate S-Score there are 67% was classified as went bankrupt and 33% be considered safe.

Conceptual Framework

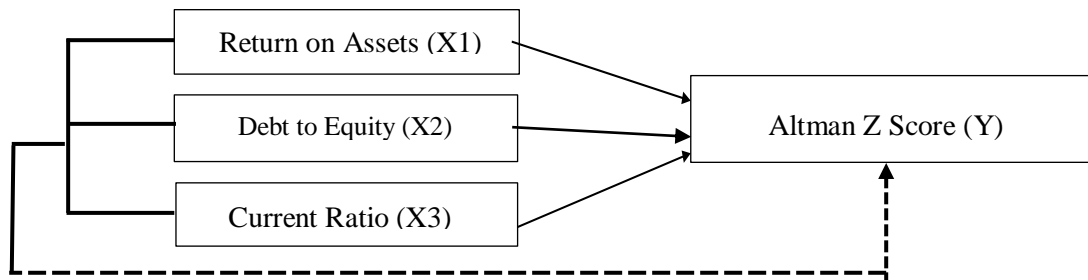


Figure 1. Conceptual Framework

Source: Literature Review

Research Hypotheses

H1: Profitability (Return on assets) influences Financial Distress (Altman Score)

H2: Leverage (Debt to Equity Ratio) has a significant influence on Financial Distress (Altman Z-Score).

H3: Liquidity (Current Ratio) has a significant effect on Financial Distress (Altman Z-Score)

H4: ROA, DER, and Current Ratio simultaneously effect on financial distress

RESEARCH METHOD

Research Approach

The nature of this research is descriptive and quantitative explanatory research to test hypotheses to analyze the effect of financial ratio variables on Financial Distress / financial pressure with the Altman Z-Score method. This study uses a cross-sectional time horizon, which means the research is only carried out in a certain time with only one focal point.

Population, Sample, and Sampling Technique

This research using 16 companies from hotel and tourism companies listed in Indonesian stock exchange that had publicly posted the financial statement with in 2015 to 2020. This study uses the purposive sampling. According to Sugiyono (2012), purposive sampling is the technic sampling determining with the certain consideration.

Data Collection Method

The researcher is using the secondary data which mean the data that has been collected before this research is conducted. The data that the research took is the data from Indonesian stock exchange about the hotel and tourism company financial statement.

Operational Definition of Research Variable

Table 1 Variable Definition

Variable	Definition	Indicator
Return on Assets (X1)	Return on assets (ROA) is an indicator of how well a company utilizes its assets in terms of profitability.	Net Income Total Asset
Debt to Equity Ratio (X2)	The debt-to-equity (D/E) ratio compares a company's total liabilities to its shareholder equity and can be used to evaluate how much leverage a company is using.	Total Liabilities Total Equity
Current Ratio (X3)	The current ratio is a liquidity ratio that measures a company's ability to pay short-term obligations or those due within one year. It tells investors and analysts how a company can maximize the current assets on its balance sheet to satisfy its current debt and other payables.	Current assets Current Liabilities

Z score	Z score is a bankruptcy prediction by Altman	Working Capital
		Total Asset
		Retained Earnings
		EBIT
		BVE
		Total Equity

Source: *Theoretical Review*, 2021

Data Analysis Method

Panel Data Regression Analysis

Panel data is a combination of time series data with cross section. In other words, panel data is data obtained from the observed cross section data repeated on the same object unit at different times. Therefore, will get a picture of the behavior of some of these objects during the several time periods (Tarigan, 2012).

Fixed Effect Model

The defining feature of the fixed-effect model is that all studies in the analysis share a common effect size. The fixed effect model will be used in this research with the following model;

$$Y_{it} = \alpha + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \mu_i + e_{it}$$

Where,

- Y = Z Score
- I = entity (hotel and tourism company)
- T = the period of research (2015-2020)
- α = Constant
- $\beta_{1,2,3}$ = Coefficient of independent variables
- X_1 = Return on Asset
- X_2 = Debt to Equity Ratio
- X_3 = Current Ratio

RESULT AND DISCUSSION

Multicollinearity Test

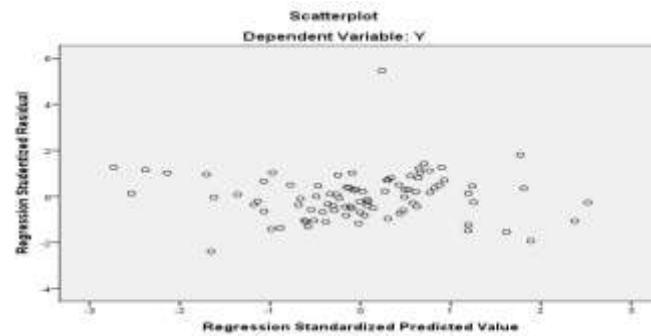
Table 2. Multicollinearity Test

Model	Unstandardized		Coefficients ^a		t	Sig.	Collinearity	
	Coefficients		Standardized				Statistics	
	B	Std. Error	Coefficients				Tolerance	VIF
(Constant)	2.694	.362			7.448	.000		
ROA	4.504	2.242	.142		2.009	.048	.976	1.025
DER	-1.208	.172	-.526		-7.043	.000	.880	1.137
CR	.956	.171	.417		5.600	.000	.885	1.130

a. Dependent Variable: Y

Spss Ouput 20, 2021

The table 2 shows that none of the variables that is used in this research has a correlation to each other. Based on the tolerance value Return on Asset has a 0.976 and Debt-to-equity ratio has 0.880 while current ratio has 0.885. None of these variables has more than 0.10 which is there no multicollinearity happened. While if the variables determined by VIF, the return on assets has 1.025 and debit-to equity ratio has 1.137 while current ratio has 1.130 it shows that all of these variables is less than 10 it can conclude none of these variables has multicollinearity.

Heteroscedasticity Test**Figure 2. Heteroscedasticity Test***Source: SPSS Output 20, 2021*

Based on the scatterplot the variables that is used in this research has not heteroscedasticity, it can see the point spread randomly both above and below on the y-axis. And did not show any certain pattern so it can conclude there is no heteroscedasticity in this regression model.

Fixed Effect Model**Table 3. Regression Fixed Effect Model**

Parameter	Estimate	Std. Error	df	t	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Intercept	3.763810	1.817116	41.000	2.071	.045	.094070	7.433549
ROA	37.880036	20.060339	41.000	2.401	.023	-2.632642	78.392713
DER	-4.640531	2.012534	41	-2.306	.026	-8.704926	-.576135
CR	1.892450	1.566518	41.000	2.308	.000	-1.271197	5.056097

a. Dependent Variable: Y

Source: Spss 20, 2021

Based on the table of Regression Fixed Effect Model, the result shown in table 4.4, model equations are obtained from the dependent variable and independent as follows:

$$y_{it} = \alpha + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \mu_i + e_{it}$$

$$Y: 3.763810 + 37.880036 \text{ ROA} - 4.640531 \text{ DER} + 1.892450 \text{ CR}$$

From the model above, it can be concluded that;

1. All the independent variables will be considered as constant if all the variables have a value of zero means the return on equity, debt to equity ratio, and current ratio do not increase or decrease; the z score value of the objectives company is 3.763810
2. The estimates value of return on assets is 37.880036 and has a positive sign which means that every 1% increase on Return on Assets will cause an increase in z score as much as 37.880036
3. The coefficient value of Debt-to-equity ratio is - 4.640531 and has a negative sign which means that every 1% increase on debt-to-equity ratio will cause decrease z score as much - 4.640531
4. The coefficient value of current ratio is 1.892450 and has a positive sign which means that every 1% increase on current ratio will increase in z score as much as 1.892450.

F TEST**Table 4. F TEST Result**

		ANOVA ^a				
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	115.507	3	38.502	39.564	.000b
	Residual	82.720	85	.973		
	Total	198.227	88			

Dependent Variable: Y

Predictors: (Constant), CR, ROA, DER

Source: SPSS Ouput 20, 2021

In order to measure the value will use this following Formula:

$$DF1 = k - 1 = 3 - 1 = 2$$

$$DF2 = n - k = 16 - 3 = 13$$

If the f count Greater than f table and the significance is less than 5 % it means that reject the Ho and accept the Ha. The f table result 3.81 and the f count result is 38.502 which means that the f count value is greater than > F table. And the significance Value is 0.000 which means that, the significance value is less than 0.005 so it can conclude that; the independent variables (return on equity, debt-to-equity ratio, and current ratio) are simultaneously affect z score.

T Test Result

1. Return on assets on the panel data regression analysis show the value of return on assets has a value negative 37.880036 and the significance value of return on assets is 0.023% which is < 0.05. and also, the value of t count is greater than value of t table, the value of t count is 2.401 and the value of t table is 2.16037.
2. Debt-to-equity ratio on the panel data regression analysis show the value of debt-to-equity ratio has a value of -4.640531 and the significance value 0.026, the value of t count is greater than t table. The value of t count is 2.306 which is greater than 2.16037.
3. Current ratio on the panel data regression analysis shows the value of current ratio is 1.892450 and the significance value of current ratio is 0.000. and also, the value of t count is greater than t table. The value of t count is 2.308 which is greater than 2.16037.

R Square Test

Table 5. R Square Result

Model Summary ^b				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.763 ^a	.583	.568	.98650

a. Predictors: (Constant), CR, ROA, DER

b. Dependent Variable: Y

Source: SPSS 20. 2021

The R Square is use to determined is used to measure how big the relationship between independent variable which are; Return on Asset, Debt-to-equity ratio, Current Ratio. According to the coefficient determination table 4.6. It is show z score from service industry sub sector hotel, and tourism can be explained by variations by return on asset. Debt-to-equity ratio as much as 56%. At the same time 44% is influenced by other factors or variables not examined in this study.

Discussion

The Effect of Return on Assets on Financial Distress Prediction

The test show that Returns on assets has positive and significance effect on financial distress z score model, based on the t test result the value of return on assets is 37.880036 and has a significance value of 0.023 which is less than 0.05, beside that the value of t count is greater than value of t table which is 2.401 The higher the return on Assets number, the better for the company financial because the company is earning more money on less investment. Return on assets is an indicator of how efficient or profitable a company is relative to its assets or the resources it owns or controls. a failing return on assets indicates the company might over invested in assets that have failed to produce revenue growth. Assign the company may be in trouble which can lead to financial distress.

The Effect of Debt-to-Equity Ratio on Financial Distress Prediction Model

The result show that debt-to-equity ratio has negative and significance effect on financial distress prediction model. Based on the t test result the value of debt to-equity ratio is -4.640531 and has a significance value of 0.26 which mean less than 0.05. Beside that the value of t count is greater than the value of t table. A

high debt-to-equity ratio indicates a business uses debt to finance its growth. Companies that invest large amount of money in assets and operations often have higher debt-to-equity ratio. For lenders and investors means a riskier investment because the business might not be able to produce enough money to repay its debts. If a debt-to-equity ratio is lower closer to zero this often means the business has not relied borrowing to finance operations. Investors are unlikely to invest in a company with very low ratio because the business is not realizing the potential profit or value it could gain by borrowing and increasing operations. The higher the level of corporate will increase the potential of for experiencing financial distress.

The Effect of Current Ratio to Financial Distress Prediction Model

The result show current ratio has positive and significance effect on financial distress prediction model z score, based on the t test result the value of current ratio is 1.892450 with the significance score 0.000 which less than 0.05 and beside that the value of t count is greater than t table. Current ratio is used to measure the ability of corporations to pay their short-term liabilities using current assets. The higher the ratio indicates, the less likely the corporations to experience financial distress (Restianti and Agustina, 2018). This result contradicts with the result of desiyanti et al. (2019) that CR have Significant negative effect on altman z score.

CONCLUSION AND RECOMMENDATION

Conclusion

Based on the result analysis and the discussion on the previous chapter. The result of the research could be drawn as follows:

1. There is a significant effect between the return on asset and the z score of financial distress
2. There is a significant Effect between Debt-to-equity ratio and the z score of financial distress
3. There is a significant Effect between current ratio and the z score of financial distress
4. Return on asset, debt to equity ratio, and current ratio simultaneously affect the financial distress
5. Financial distress analysis using the altman z score method z score of the result object in this study which are hotel, and tourism it is show the increasing for year 2020. Marked by 2 companies are in z score in 2015 become 5 company in 2020.

Recommendation

1. For Management it is need to pay attention to financial ratios because in this study, return on asset, debt to equity ratio, and current ratio has a significant effect on altman z score financial distress model. And also needs to be done an analysis of Z score method internally in order to prevent any crisis in the future because altman z score has been more than fifty years proven and reliable.
2. For investors and creditors, the sooner to understand and analyze the financial ratios and Z Scores of the companies they invest in/granted credit, they will be able to avoid the worst possible default of investors and creditors on their investment/credit.
3. The next researcher, it can take another object and perhaps can add other independent variables as beside return on assets, debt to equity ratio and current ratio, for example take GDP, inflation rates. And also, perhaps this research can become a references source for study so this research can provide more benefits for Education

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