

## PREDICTION OF FINANCIAL DISTRESS IN PROPERTY AND REAL ESTATE COMPANIES IN INDONESIA: LIQUIDITY RATIO, LEVERAGE RATIO, ACTIVITY RATIO, PROFITABILITY RATIO, GROWTH RATIO

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### Abstract

This study aimed to examine the effect of the ratio liquidity, leverage, activity, profitability and growth on the probability of financial distress. Liquidity is measured by quick ratio, leverage is measured by debt ratio, activity is measured by total asset turn over, profitability is measured by gross profit margin and growth is measured by net profit growth. The population in this study are all property and real estate company listed on the Indonesia Stock Exchange in 2014 until 2016. The total samples tested were 41 company selected by purposive sampling technique. This research analyzes financial distress through company annual report by using content analysis method. Data analysis techniques use panel data regression with EViews 9.0 program. These results indicate that the ratio of activity and profitability affect the financial distress. While the ratio of liquidity, leverage and growth don't affect the financial distress.

Keywords: Financial distress, liquidity, leverage, activity, profitability and growth.

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### 1. Introduction

The property industry has an important role in creating jobs. There are at least 174 other industries that are directly related to the property sector, ranging from ceramics, steel, cement, construction services, paint, power tools and so on. The more advanced the property industry, the more qualified the national economic growth. Vice versa, if the property industry sector performs poorly, it will create a domino effect of slump on the industries directly related to it.

An example of a case that has occurred and has had a significant impact on countries in the world including Indonesia is the global Subprime Mortgage crisis in 2008 where there has been a housing crisis in the United States triggered by credit defaults from debtors with high default profiles. This credit is characterized by giving higher than normal interest rates and the distribution tends to be less careful, coupled with the borrower's finances are not analyzed carefully. If we look at several examples of cases that occur in several countries, it can be seen that the property and real estate business can be used as a signal to observe the beginning of the fall and revival of a country's economy.

### 2. Theoretical Background

#### 2.1 Signalling theory

Hendrianto (2012) in Utami (2015), signal theory in the topic of financial distress explains that if the company's financial condition and prospects are good, managers signal by organizing liberal accounting. Conversely, if the company is in financial distress and has poor prospects, the manager signals by conducting conservative accounting.

## 2.2. Financial Distress

According to Widarjo and Setiawan (2009), financial distress is the stage of deterioration in financial condition before bankruptcy or liquidation.

The method used in this study is to use the negative earning per share method, in accordance with research conducted by Elloumi and Gueyie (2001), Bodroastuti (2009), Agusti (2013), Putri and Merkusiwati (2014) and Hanafi and Breliastiti (2016). This method is used because companies that experience these conditions will find it difficult to get sources of financing.

## 2.3 Financial Ratio Analysis

According to Etty and Rayenda (2007) in Andre (2013) financial ratios give an indication of the financial strength of the company, financial ratios are also useful in predicting the financial difficulties of a business for a period of one to five years before the business goes completely bankrupt.

## 3. Hypothesis Development

### a. Liquidity to Financial Distress

The liquidity ratio is an indicator of a company's ability to pay all short-term financial obligations at maturity with available current assets.

H<sub>1</sub>: The liquidity ratio negatively affects financial distress

### b. Leverage to Financial Distress

The greater the company's activities financed by debt, the greater the possibility of financial distress, due to the greater the company's obligation to pay the debt.

H<sub>2</sub>: The leverage ratio has a positive effect on financial distress

### c. Ratio of Activity to Financial distress

If the company can manage its resources as efficiently as possible then the company will avoid conditions that lead to bankruptcy, Dwiyanti (2016).

H<sub>3</sub>: The ratio of activity negatively affects financial distress

### d. Profitability to Financial distress

The profitability ratio is used to measure the company's ability to earn profits. With high profits will reduce the company's chances of financial distress.

H<sub>4</sub>: The profitability negatively affects financial distress

### e. Growth to Financial distress

Increasing net profit growth every year will benefit the company and shareholders. Vice versa, a decrease in net profit growth will disrupt the company's financial performance and stability.

H<sub>5</sub>: Growth ratio negatively affects financial distress

## 3. Methods

### 3.1 Population and Sample

The sample of this study was taken using purposive sampling method. Purposive sampling method is a sampling method using criteria that have been set by research.

### 3.2 Definition and Measurement of Variables

#### a. Independent Variables

In this study there are 5 (five) independent (free) variables, namely:

##### 1) Liquidity Ratio

In this study, the liquidity ratio is measured by quick ratio.

$$\text{Quick Ratio} = \frac{\text{Total Aset Lancar} - \text{Persediaan}}{\text{Total Utang Lancar}}$$

Source: Harjito and Martono (2011:56)

##### 2) Leverage Ratio

In this study, the ratio used to measure leverage is the debt ratio, which is a comparison between total debt, with total assets owned by the company.

$$\text{DEBT Ratio} = \frac{\text{Total Utang}}{\text{Total Aset}}$$

Source: Harjito and Martono (2011:59)

##### 3) Activity Ratio

In this study, the ratio of activity is proxied to total asset turnover.

$$\text{Total Asset Turn over} = \frac{\text{Penjualan}}{\text{Total Aset}}$$

Source: Harjito and Martono (2011:59)

##### 4) Profitability Ratio

The profitability ratio in this study is measured through gross profit margin, this ratio looks at the trend of the company's gross profit picture.

$$\text{Gross Profit Margin} = \frac{\text{Laba Kotor}}{\text{Penjualan}}$$

Source: Harjito and Martono (2011: 60)

##### 5) Growth Ratio

In this study, the growth ratio is proxied with the net profit growth ratio, from this ratio will be revealed the comparison of this year's profit with last year's profit.

$$\text{Rasio Net Profit Growth} = \frac{\text{Laba Bersih Tahun Ini} - \text{Laba Bersih Tahun Kemarin}}{\text{Laba Bersih Tahun Kemarin}}$$

Source: Yunanto (2016)

#### b. Dependent Variables

In this study, the dependent variable of financial distress is defined as a company that has negative earnings per share.

### 3.3 Data Analysis Techniques

In this study, the data analysis technique used was logistic regression analysis of panel data with the help of statistical data processing software, namely Eviews 9.0. The logistic regression equation of panel data in this study is as follows:

$$\text{FD} = \alpha + \beta_1 \text{RLIK} + \beta_2 \text{RLEV} + \beta_3 \text{RAKT} + \beta_4 \text{RPROF} + \beta_5 \text{GROWTH} + e$$

## Description:

FD	= Financial distress (Y)
$\alpha$	= constant
$\beta_1, \dots, \beta_5$	= Logistic Regression Coefficient
RLIK	= Liquidity Ratio (X1)
RLEV	= Leverage Ratio (X2)
RAKT	= Activity Ratio (X3)
RPROF	= Profitability Ratio (X4)
GROWTH	= Growth Ratio (X5)
e	= Error component

## 4. Result and Discussion

### 4.1 Descriptive Statistical Analysis

	FD	RLIK	RLEV	RAKT	RPROF	GROWTH
Mean	0.878049	1.648943	0.373171	0.210894	0.550813	0.435122
Median	1.000000	0.860000	0.390000	0.210000	0.550000	0.030000
Maximum	1.000000	15.55000	0.670000	0.520000	0.830000	63.55000
Minimum	0.000000	0.030000	0.030000	0.010000	0.080000	-16.06000
Std. Dev.	0.328568	2.421492	0.168947	0.100344	0.138402	6.343981
Skewness	-2.310604	3.910819	-0.170386	0.167132	-0.702926	7.891742
Kurtosis	6.338889	20.29552	1.953937	2.711961	4.437553	81.70030
Jarque-Bera	166.5816	1846.604	6.203160	0.997833	20.72026	33019.63
Probability	0.000000	0.000000	0.044978	0.000000	0.000032	0.000000
Sum	108.0000	202.8200	45.90000	25.94000	67.75000	53.52000
Sum Sq. Dev.	13.17073	715.3620	3.482263	1.228402	2.336919	4910.024
Observations	123	123	123	123	123	123

In the table of processed Eviews above, it can be described that the amount of data (observations) used in this study is 123 data consisting of all variables used in the study, namely dependent and independent variables.

The mean value of the liquidity ratio is 1.648943 which indicates the average ability of the company to meet its short-term obligations is 1.6 times. The largest median value is the liquidity ratio variable proxied through a quick ratio of 0.860000, while the smallest median value is the variable growth ratio of 0.030000.

The largest maximum value is the growth variable of 63.55000, while the smallest maximum value is the variable activity ratio proxied with a total asset turn over of 0.520000. The minimum value of the liquidity variable is proxied with a quick ratio of 0.030000.

The largest standard deviation value is the growth variable of 6.343981, while the activity ratio variable proxied to total asset turnover has the smallest standard deviation of 0.100344.

The variables that have positive skewness are liquidity ratio, activity ratio and growth ratio, while financial distress variables, leverage ratio and profitability ratio are negative.

Variables that have a kurtosis value of less than 3 are only leverage ratios. Small probability values tend to lead to the rejection of the null hypothesis value of the normal distribution. The whole variable has a probability value smaller than  $\alpha=0.05$ , this indicates that the data is normally distributed.

#### 4.2 Overall Model Fit Test

The overall model fit test is used to assess whether the overall model fit test is fit for data and suitable for future analysis.

McFadden R-squared	0.474712
S.D. dependent var	0.328568
Akaike info criterion	0.487109
Schwarz criterion	0.624289
Hannan-Quinn criter.	0.542831
Restr. Deviance	91.21550
LR statistic	43.30106
Prob(LR statistic)	0.000000

Based on the table above, it can be seen that the value of LR statistic is 43.30106, while the value of F table with  $df1 = k-1$  (5),  $df2 = n-k$  (117) shows a value of 2.29183 smaller than the value of LR statistic. And it can be seen that the Prob (LR Statistic) value is 0.000000, which is smaller than the test significance level of 0.05, with a confidence level of 95 %. It can be concluded that the model is fit or suitable and worth using.

#### 4.3 Uji F

The results of Test F (LR Stat) show whether all independent variables entered into the model together have an influence on the dependent variable or in other words the model fit or not.

McFadden R-squared	0.474712
S.D. dependent var	0.328568
Akaike info criterion	0.487109
Schwarz criterion	0.624289
Hannan-Quinn criter.	0.542831
Restr. deviance	91.21550
LR statistic	43.30106
Prob(LR statistic)	0.000000

Based on the table above, it can be seen that the value of LR statistic is 43.30106, while the value of F table with  $df1 = (5)$ ,  $df2 = n-k$  (117) shows a value of 2.29183 smaller than the value of LR statistic. Thus, LR statistic (43.30106) > F Table (2.291828) and Prob value (LR Statistic) of 0.000000 < 0.05 indicate that  $H_a$  is accepted. It can also be concluded that simultaneously the independent variables in this study affect the dependent variable, namely financial distress.

#### 4.4 Coefficient of Determination Test (McFadden R-squared)

McFadden R-squared	0.474712
S.D. dependent var	0.328568
Akaike info criterion	0.487109
Schwarz criterion	0.624289
Hannan-Quinn criter.	0.542831
Restr. deviance	91.21550
LR statistic	43.30106
Prob(LR statistic)	0.000000

The result of McFadden R-Squared in this model is 0.474712 meaning that 47.47% of the occurrence of financial distress occurs due to the variables studied while the remaining 52.53% is caused by variables or other things outside of the variables studied.

#### 4.5 Test t

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	-1.242964	1.084547	-1.146068	0.2518
RLIK	-0.228944	0.122368	-1.870953	0.0614
RLEV	-1.968024	1.333498	-1.475835	0.1400
RAKT	5.418677	2.695114	2.010556	0.0444
RPROF	5.364308	1.961779	2.734411	0.0062
GROWTH	0.103436	0.066508	1.555253	0.1199

Based on the table of t-test results in logistic regression analysis, the hypothetical results are concluded as follows:

1. The p rob value of the liquidity ratio shows 0.0614 which is greater than the significance value of 0.05,  $0.0614 > 0.05$ , while the z-statistic results obtained are -1.870953, which is smaller than the t-table which is 1.98045 of the  $df = n-k$  value (117),  $-1.870953 < 1.98045$ . This shows that the liquidity ratio variable has no effect on financial distress. So that **H1 in this study was rejected.**
2. The prob value of the leverage ratio produces a number of 0.1400 which is greater than the significance value of 0.05,  $0.1400 > 0.05$  while the z-statistic value obtained is -1.475835, smaller than the value of the t-table obtained 1.98045 from the value of  $df = n-k$  (117),  $-1.475835 < 1.98045$ , it can be concluded that the variable leverage ratio has no effect on financial distress, which means the **H2 in the study was rejected.**
3. The ratio variable gets a prob value of 0.0444 which is smaller than the significance value of 0.05,  $0.0444 < 0.05$  and the resulting z-statistic value of 2.010556, this value is greater than the t-table obtained 1.98045 from the value of  $df = n-k$  (117),  $2.010556 > 1.98045$  which means that the activity ratio variable has a positive effect on the occurrence of financial distress. This is not in line with the hypothesis proposed by the researcher, so the **H3 in this study was rejected.**
4. The probability value of the profitability ratio shows 0.0062 which is smaller than the significance value of 0.05,  $0.0062 < 0.05$ , while the z-statistic results obtained are 2.734411, which is greater than the t-table which is 1.98045 of the values  $df = n-k$  (117),  $2.734411 < 1.98045$ , this shows that the variable profitability ratio has a positive effect on financial distress. This is contrary to the hypothesis proposed by the researcher, so that **H4 in this study was rejected.**
5. The z-statistic value of the growth ratio produces a number of 0.1199 which is greater than the significance value of 0.05,  $0.1199 > 0.05$ , while the z-statistic value obtained is 1.555253, smaller than the value of the t-table obtained 1.98045 from the value of  $df = n-k$  (117),  $1.555253 < 1.98045$ , it can be concluded that the variable profitability ratio has no effect on financial distress, which means **H5 in this study it was rejected.**

#### 5. Conclusion

Based on the results of data analysis and discussion that has been described, the conclusions of this study are as follows: (1) Liquidity ratios do not affect the financial distress of property and real estate companies in Indonesia in 2014-2016. There is no significant difference between the liquidity of companies that experience financial distress conditions and companies that do not experience financial distress. This will better reflect the company can meet its current obligations that are due in a timely manner and the potential for financial distress will be smaller. (2) The leverage ratio does not affect the financial distress of property and real estate companies in Indonesia in 2014-2016. Large companies tend to have a large level of leverage ratio as well, but even though they have a large level of leverage ratio with a large company size by diversifying their business so

that the use of high debt will increase profitability. (3) The activity ratio has a positive effect on the financial distress of property and real estate companies in Indonesia in 2014-2016. High sales generated by exerting assets but the profits generated from these sales are not proportional to investments in assets show bad company criteria and can affect the company's financial condition, thus triggering financial distress. (4) Rasio profitability has a positive effect on the financial distress of property and real estate companies in Indonesia in 2014-2016. This is because high gross profit does not reflect high net profit as well. The gross profit obtained by the company has not been deducted from other relatively high costs such as from other expenses, tax rates and interest. Therefore, a large gross profit margin value has the potential to contain a large burden that causes company losses which lead to increased risk of financial distress. (5) The growth ratio has no effect on the financial distress of property and real estate companies in Indonesia in 2014-2016. The decline in net income from year to year does not directly indicate that the company is experiencing financial distress, while the increase in profit from year to year if the company is already in a financial distress condition will also not change the condition to non-financial distress but only minimize the condition of financial distress.

This research has several limitations, including: (1) This research is only limited to property and real estate sector companies listed on the IDX in 2014-2016. (2) The observation year in this study was only 3 years, starting from 2014-2016. (3) The independent variable of the study was only 5. (4) The source of information that is used as the basis for assessing financial distress is only one measure, namely negative earnings per share.

The suggestions that the researcher wants to convey for the next research are as follows: (1) Add the company's sector and observation period. (2) Using more diverse financial ratio variables (3) Not fixed only by using financial ratios, but other variables that are thought to affect financial distress such as good corporate governance mechanisms, (4) Expected to use other measures to proxie financial distress conditions such as altman z score, interest coverage ratio, net operating income etc.

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