

The Effect of Liquidity, Leverage and Firm Size on Financial Distress

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Abstract

Intense economic competition can place companies in a state of prolonged and increasingly out of control financial crisis. so that it will result in the company being in a financial condition that experienced a decline before bankruptcy or what is commonly known as Financial Distress. Researchers discuss the effect of liquidity, leverage and company size on Financial Distress in this article. The technique used in this study was purposive sampling with a sample of 19 companies. This research data was obtained from the Property and Real Estate sectors through the Indonesia Stock Exchange for the 2019-2021 period. The findings in this study reveal that firm size has an effect on Financial Distress and liquidity and leverage have no effect on Financial Distress

Key Words: Liquidity, Leverage, Firm size, Financial Distress

INTRODUCTION

Intense competition in the era of recovery and economic development again after the Covid-19 pandemic has made competition between companies quite difficult. As a result of fierce competition that is the occurrence of a financial crisis in a company. In

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conditions of a prolonged and increasingly unsustainable financial crisis, it will result in bankruptcy or commonly called Financial Distress (Cahyono & Pribadi, 2021). Financial Distress is a condition in which a company experiences financial difficulties prior to bankruptcy, thereby forcing the company to carry out liquidity (Hidayat et al., 2021).

The phenomenon of delisting in the Property and Real Estate Sector companies is increasingly happening continuously. Delisting is if the shares listed on the Exchange experience a decrease in the criteria so that they do not meet the listing requirements, then these shares can be removed from listing on the Exchange (Syuhada et al., 2020).

In the 2017-2021 period there were 5 companies listed on the IDX that experienced Delisting, including Lamicitra Nusantara Tbk which experienced Delisting in 2017, in the same year on January 19, 2019 Ciputra Surya Tbk and Ciputra Property Tbk merged with PT. Ciputra Development Tbk. In 2018 Truba Alam Manunggal Engineering experienced a Delisting. In 2020, Danayasa Arthatama Tbk will follow Delisting. This indicates a threat to the Property and Real Estate sector companies which are still listed on the Indonesia Stock Exchange.

One of the ways used to predict the existence of a condition of Financial Distress is to measure financial performance indicators from the financial reports published by the company (Syuhada et al., 2020). This is because financial reports are the foundation of information that is used by its users, so that financial reports can support the decisions taken by its users. The financial performance used in this study is calculated using the liquidity ratio, leverage ratio and company size.

Liquidity is the company's ability to meet its short-term obligations in a timely manner (Varirera & Adi, 2021). This means that current liabilities must utilize their current assets to cover the obligations that must be paid. A company can be said to be liquid if the company can complete its short-term obligations when they are due, but if the company cannot pay off its short-term obligations when they are due, then the company is said to be illiquid or illiquid (Septiani & Dana, 2019). there is research which says that Liquidity has a positive and significant effect on Financial Distress (Septiani & Dana, 2019). However, there is also research which says that Liquidity has a negative and significant effect on Financial Distress (Dwiantari & Artini, 2021). There is also research showing that Liquidity has no effect on Financial Distress (Varirera & Adi, 2021).

Leverage is a method for measuring how much a company is financed with debt. if the company cannot pay its debts for a long time it will become a financial crisis. If this situation is not balanced with good income, it is likely that the company will easily experience financial distress (Hidayat et al., 2021). according to (Dwiantari & Artini, 2021)

Leverage has a significant positive effect on Financial Distress, compared to research conducted by (Hidayat et al., 2021) which states that Leverage has a negative effect on Financial Distress. Whereas (Putri et al., 2021) states that Leverage has no effect on Financial Distress.

According to (Syuhada et al., 2020) Company size is a scale that can classify large and small companies according to various ways, namely total selling assets, stock market value, and average level of sales. Company size is often used as an indicator for the possibility of bankruptcy for a company, where a company with a larger size is seen as more capable of dealing with crises in running its business (Christine et al., 2019). Company size has a positive effect on Financial Distress (Cahyono & Pribadi, 2021). While research (Syuhada et al., 2020) states that company size has a negative and significant effect on Financial Distress. Study (Christine et al., 2019) shows that company size has no effect on Financial Distress.

LITERATURE REVIEW

Signaling Theory is a theory that explains that financial reports are used to give positive signals (good news) or negative signals (bad news) to external parties (Hidayat et al., 2021). This signal provides a source of relevant information to its users, so that users of the information can determine whether the company is worth investing in or not.

Financial Distress

According to (Putri et al., 2021) Financial Distress as a stage of decline in financial conditions that occurred before bankruptcy or liquidity occurred. The first stage in Financial Distress starts with the company's inability to pay off its obligations, especially short-term liabilities. In this study, the bankruptcy prediction model used is the Grover model. Where the Grover Model is a model created by designing and reassessing the Altman Z-Score Jeffrey S model.

Liquidity

Liquidity is a ratio that shows the company's ability to meet its short-term funding needs with the company's current assets (Varirera & Adi, 2021). The Current Ratio is the ratio used in this study, because the Current Ratio can measure whether a company is able to pay its current obligations in a timely manner or not.

leverage

the Leverage / Solvency ratio is the ratio used to measure the extent to which a company's assets are financed with debt, meaning how much debt the company bears compared to its assets (Putri et al., 2021). Leverage can be calculated using the Debt to assets ratio (DAR) formula. The DAR ratio is used to see a comparison between the total debt and assets of the company, the higher the debt ratio, the worse the condition of the company which causes creditors to cancel investment.

Company Size

Company size is an illustration of the size of the company which can be seen from the total assets owned by the company (Varirera & Adi, 2021). In this study, company size is measured using total assets, this is because total assets can influence investors' perceptions. According to (Varirera & Adi, 2021) The smaller the size of the company, the less assets the company has. Small companies tend to be more unstable in facing the threat of Financial Distress.

The Effect of Liquidity on Financial Distress

The current ratio is a ratio to measure a company's ability to pay short-term obligations or debts that are due soon when billed as a whole (Putri et al., 2021). The higher the number in the Liquidity ratio, the smaller the possibility of Financial Distress in the company, and vice versa. This is in line with the research conducted (Dwiantari & Artini, 2021) and (Syuhada et al., 2020) which states that Liquidity has a negative effect on Financial Distress. Based on the description, the research hypothesis is proposed as follows:

H1: Liquidity has a negative effect on Financial Distress.

The Effect of Leverage on Financial Distress

The leverage ratio is the ratio that shows the use of debt and the company's ability to pay debts (Syuhada et al., 2020). if debt is used too often it can cause the company to experience difficulties in paying it off so that the possibility of Financial Distress will increase. This can be proven through research conducted by (Dwiantari & Artini, 2021), (Syuhada et al., 2020) and (Cahyono & Pribadi, 2021) which states that Leverage has a positive effect on Financial Distress. Based on the description, the research hypothesis is proposed as follows:

H2: Leverage has a positive effect on Financial Distress.

The Effect of Company Size on Financial Distress

Company size can be classified as one of the elements of the work environment which will also influence management's perceptions later (Christine et al., 2019). Company size is often used as a reference for companies to measure the possibility of bankruptcy, where companies with larger company sizes will find it easier to face crises in their business. In accordance with research conducted by (Cahyono & Pribadi, 2021) which states that Company Size has a positive effect on Financial Distress. Based on the description, the research hypothesis is proposed as follows:

H3: Company size has a negative effect on Financial Distress

RESEARCH METHODS

Definition And Measurement Of Variables

Financial Distress is the stage where the company experiences a decline in financial condition where the worst result can be bankruptcy. If the company is responsive in knowing the condition of Financial Distress, it will be easier to deal with it. The bankruptcy of a company can be measured using the Grover Method. Grover's method uses a sample according to the Altman Z-score model in 1968, by adding thirteen new financial ratios. The sample used was 70 companies with 35 companies that went bankrupt and 35 companies that did not go bankrupt from 1982 to 1996. The Grover method can be calculated using the formula:

$$Z \text{ Score} = 1.650X1 + 3.404X3 - 0.016ROA + 0.057$$

Where :

X1 : Working Capital/Total Assets

X2 : Earnings before Interest and Taxes/Total Assets

X3 : Net Income/Total Assets

Operational Variables and Measurements used are as follows:

Table 1. Variable Operationalization

Object Variable	Operational Variable	Source
Dependent variable : Financial Distress		(Komarudin et al., 2019)

	$Z \text{ Score} = 1.650X_1 + 3.404X_3 - 0.016ROA + 0.057$	
Independent variable : Liquidity	$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$	(Putri et al., 2021)
Leverage	$\text{Debt Ratio} = \frac{\text{Total Liabilities}}{\text{Total Assets}}$	(Putri et al., 2021)
Firm Size	Company Size = Ln(Total Assets)	(Putri et al., 2021)

Method Of Collecting Data

The method used in this research is a quantitative method. In the quantitative method, secondary data is needed, where the secondary data needed in this study is the annual financial statements of property and real estate sector companies for a period of 3 years (2019-2021) which are registered on the Indonesian Stock Exchange (IDX) website and can be accessed via www.idx.co.id, the number of samples contained in this study amounted to 19 companies.

Sampling in this study used a purposive sampling technique. Purposive sampling is a sampling technique with certain considerations (Christine et al., 2019). The considerations made in this study include:

- Property and Real Estate sector companies listed on the Indonesia Stock Exchange (IDX) for the 2019-2021 period
- Property and Real Estate sector companies that publish Financial Reports for the period 2019 – 2021
- Property and Real Estate sector companies that make profits during the 2019-2021 period

Data analysis technique

The technique used in this study is panel data regression analysis in the Eviews 12 program. As for the linear regression of panel data in this study, it is stated as follows:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

description :

Y = Dependent Variable (Financial Distress)

A = constant

B123 = Independent Variable Regression Coefficient

X123 = Independent Variable (CR, DAR, SIZE)

ε = Residual/Error

RESULT

Panel Data Regression Estimation

Panel data regression analysis is a method used to model the effect of predictor variables on response variables in several sectors observed from an object of research over a certain period of time (meiryani, 2021a). In this study the panel data regression equation was used to select the best model to be used. Two tests were carried out, namely the Chow Test, Hausman Test and Lagrange Multiplier Test.

Redundant Fixed Effects Tests
Equation: Untitled
Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	34.942995	(18,35)	0.0000
Cross-section Chi-square	167.745003	18	0.0000

Figure 1. Chow Test

Based on the results of the calculation above, the value of the Probability Cross-section F and Cross-section Chi-square shows the number $0.000 < \alpha 0.05$, it can be concluded that the Fixed Effect Model (FEM) is more appropriate to use than the Common Effect Model (CEM)

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	10.756631	3	0.0131

Figure 2. Hausman Test



Based on the results of the calculation above the Probability (Prob.) Cross-section random $0.0131 < \alpha 0.05$, it can be concluded that the Fixed Effect Model (FEM) is more appropriate to use than the Random Effect Model (REM)

Lagrange Multiplier Tests for Random Effects
Null hypotheses: No effects
Alternative hypotheses: Two-sided (Breusch-Pagan) and one-sided (all others) alternatives

	Cross-section	Test Hypothesis Time	Both
Breusch-Pagan	39.39212 (0.0000)	1.230300 (0.2673)	40.62242 (0.0000)
Honda	6.276314 (0.0000)	-1.109189 (0.8663)	3.653709 (0.0001)
King-Wu	6.276314 (0.0000)	-1.109189 (0.8663)	0.932476 (0.1755)
Standardized Honda	6.968930 (0.0000)	-0.863875 (0.8062)	0.801200 (0.2115)
Standardized King-Wu	6.968930 (0.0000)	-0.863875 (0.8062)	-1.152332 (0.8754)
Gourieroux, et al.	--	--	39.39212 (0.0000)

Figure 3. Lagrange Multiplier

Based on the results of the calculation of the Breusch-pagan Cross-section Probability value of $0.000 < \alpha 0.05$, the Random Effect Model (REM) is more appropriate to use than the Common Effect Model (CEM)

Conclusion Panel Data Regression Model used

Table 2. conclusion of panel data regression

No	Method	Testing	Results
1	Chow test	CEMs vs FEMs	FEM
2	Hausman test	REM vs FEM	FEM
3	Lagrange Multiplier Test	CEM vs REM	BRAKE

Based on the results of the three tests that have been carried out, it can be concluded that the Panel Data Regression that can be used in the Hypothesis Test and the Panel Data Regression equation is the Fixed Effect Model (FEM).

Next, a classic assumption test will be carried out, where in the classic assumption test there are 2 tests, namely the Multicollinearity Test and the Heteroscedasticity Test. Multicollinearity testing aims to determine whether the regression model found a correlation between the independent variables or the independent variables. The effect of this multicollinearity causes high variables in the sample (Mulyono, 2019). The Heteroscedasticity Test aims to test whether in a regression model there is variance discomfort from the residuals in one observation to another. If the variants are different, it is called heteroscedasticity (Mulyono, 2019).

	ZSCORE	CR	DAR	SIZE
ZSCORE	1.000000	0.292380	-0.138141	-0.059995
CR	0.292380	1.000000	-0.338923	-0.127316
DAR	-0.138141	-0.338923	1.000000	0.094584
SIZE	-0.059995	-0.127316	0.094584	1.000000

Figure 4. Multicollinearity Test

From the output above, it can be seen that there are no independent variables that have a value of more than 0.8, so it can be concluded that there is no multicollinearity in the regression model

Dependent Variable: RESABS Method: Panel Least Squares Date: 10/24/22 Time: 15:46 Sample: 2019 2021 Periods included: 3 Cross-sections included: 19 Total panel (balanced) observations: 57				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.104548	0.076102	1.373795	0.1753
CR	5.03E-05	7.77E-05	0.647457	0.5201
DAR	-0.001202	0.030816	-0.038991	0.9690
SIZE	-0.002037	0.002668	-0.763650	0.4485
R-squared	0.022969	Mean dependent var		0.047021
Adjusted R-squared	-0.032335	S.D. dependent var		0.042375
S.E. of regression	0.043054	Akaike info criterion		-3.385125
Sum squared resid	0.098244	Schwarz criterion		-3.241753
Log likelihood	100.4760	Hannan-Quinn criter.		-3.329405
F-statistic	0.415323	Durbin-Watson stat		1.416593
Prob(F-statistic)	0.742698			

Figure 5. Heteroscedasticity Test

There are many methods that can be used in the Heteroscedasticity Test, including the Pagan Breusch test, White test, Glesjer test and others. In the Heteroscedasticity Test, the

authors did not use the Breusch Pagan method but instead used the Glesjer Test. From the output above it can be seen that the Prob. > α 0.05, with the hypothesis that if



the Prob. greater than the α level of 0.05 (5%) then H_0 is accepted, which means that heteroscedasticity does not occur.

If the Prob. smaller than the α level of 0.05 (5%) then H_a is accepted which means there is Heteroscedasticity. so there is no heteroscedasticity.

The next test is the Hypothesis Test which is represented by the F Test, the Coefficient of Determination and the T Test.

R-squared	0.951907	Mean dependent var	0.730030
Adjusted R-squared	0.923051	S.D. dependent var	0.343815
S.E. of regression	0.095373	Akaike info criterion	-1.577807
Sum squared resid	0.318363	Schwarz criterion	-0.789261
Log likelihood	66.96750	Hannan-Quinn criter.	-1.271351
F-statistic	32.98819	Durbin-Watson stat	3.173932
Prob(F-statistic)	0.000000		

Figure 6. F test

The F test aims to find out whether the independent variables simultaneously (simultaneously) affect the dependent variable. The F test was carried out to see the effect of all the independent variables together on the dependent variable (meiryani, 2021c).

And the output above shows an F-statistic value of 32.98819, while F Table with a level of $\alpha = 0.05$ (5%), namely $df_1 (k - 1) = 3$ and $df_2 (n - k) = 53$ and obtained table F value of 2.779114. So it can be concluded that the F-statistic > F Table, then H_a is accepted and the independent variable (X) has an effect on the dependent variable (Y) and if you look at the Prob(F-statistic) of $0.00000 < \alpha = 0.05$, then it can be concluded that H_a is accepted and the independent variable (X) influences the dependent variable (Y).

R-squared	0.951907	Mean dependent var	0.730030
Adjusted R-squared	0.923051	S.D. dependent var	0.343815
S.E. of regression	0.095373	Akaike info criterion	-1.577807
Sum squared resid	0.318363	Schwarz criterion	-0.789261
Log likelihood	66.96750	Hannan-Quinn criter.	-1.271351
F-statistic	32.98819	Durbin-Watson stat	3.173932
Prob(F-statistic)	0.000000		

Figure 7. The coefficient of determination

Testing the coefficient of determination is carried out with the intention of measuring the ability of the model to explain how the effect of the independent variables

jointly (simultaneously) affects the dependent variable which can be indicated by the value of adjusted R – Squared (meiryani, 2021b).

In the Adjusted R-squared table, there is a value of 0.923051, which means that the variation in changes in the ups and downs of ZSCORE can be explained by the Current ratio, Debt to Assets ratio, and Company Size of 92% (Percent). While the remaining 8% (percent) is explained in other variables not examined in this study.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	6.690223	2.068168	3.234855	0.0027
CR	2.13E-05	0.000281	0.075814	0.9400
DAR	0.057927	0.280836	0.206268	0.8378
SIZE	-0.209067	0.070359	2.971433	0.0053

Figure 8. T test

The t test was conducted to test the research hypothesis regarding the effect of each independent variable partially on the dependent variable. The T test (Test T) is a statistical test that is used to test the truth or falsity of a hypothesis which states that between two mean samples taken randomly from the same population, there is no significant (meiryani, 2021d).

The t-statistic value for CR is 0.075814 and t table with a level of $\alpha = 5\%$, $df (n - k) = 53$ and a T table value of 2.005746 is obtained. So that the t-statistic CR $0.075814 < T$ table 2.005746 and prob. for CR of $0.9400 > 0.05$. then H_0 is accepted and the CR variable partially has no effect on the Financial Distress (ZSCORE) variable

The t-statistic value for DAR is 0.206268 and T table with a level of $\alpha = 5\%$, $df (n - k) = 53$ and the t table value is 2.005746. So that the DAR t-statistic is $0.206268 < T$ table is 2.005746 and the prob value. DAR of $0.8378 > 0.05$ then H_0 is accepted and the DAR variable partially has no effect on the Financial Distress (ZSCORE) variable

The t-statistic value for SIZE is 2.971433 and T table with a level of $\alpha = 5\%$, $df (n - k) = 53$ and the t table value is 2.005746. So that the t-statistic SIZE is $2.971433 > t$ table 2.005746 and the prob value. For SIZE of $0.0053 < 0.05$ then H_a is accepted and the SIZE variable partially has a negative effect on the Financial Distress (ZSCORE) variable

DISCUSSION

The Effect of Liquidity on Financial Distress

Based on the results of the analysis of Liquidity, Current Ratio has no effect on Financial distress. This means that the higher liquidity does not have any effect on Financial Distress. This is evidenced by the value of the t-statistic CR $0.075814 < T$ table 2.005746 which means that there is no influence between Liquidity and Financial Distress and is also in line with research (Varirera & Adi, 2021) which states that no liquidity has no effect on Financial Distress

The Effect of Leverage on Financial Distress

Based on the results of the analysis of leverage, it was found that the t-statistic DAR $0.206268 < T$ table 2.005746 and the prob value. DAR is $0.8378 > 0.05$ which means that leverage proxied by the Debt to Assets Ratio (DAR) has no effect on Financial Distress. This means that the size of the company using debt has no correlation with Financial Distress, so the amount of debt the company has does not affect the condition of Financial Distress. This is in line with research conducted by (Putri et al., 2021) Which states that Leverage has no effect on Financial Distress

The Effect of Company Size on Financial Distress

Based on the results of an analysis of company size, it was found that the t-statistic SIZE was $2.971433 > t$ table 2.005746 and the prob value. For a SIZE of $0.0053 < 0.05$, this means that company size has a negative effect on financial distress. This means that the lower the size of the company, the higher the possibility of Financial Distress. This is in line with research conducted by (Syuhada et al., 2020) states that company size has a negative and significant effect on Financial Distress.

CONCLUSION

Based on the results of the analysis and discussion of the effect of Liquidity, Leverage, and Firm Value on Financial Distress, it can be concluded that Liquidity proxied by the Current Ratio partially has no effect on Financial Distress in Property and Real Estate sector companies for the 2019-2021 period. Leverage proxied by the Debt to Assets Ratio partially has no effect on Financial Distress in the Property and Real Estate sector companies for the 2019-2021 period. And the size proxied by partial size has a

negative effect on Financial Distress in the Property and Real Estate sector companies for the 2019-2021 period.

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