The Effect of Liquidity, Solvency, and Profitability Ratios on Transportation Sub-Sector Companies Listed on The Bei in 2017-2021

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A R T I C L E I N F O	ABSTRACT
	This study aims to analyse the effect of liquidity, solvency, and profitability ratios on financial distress. The object of this research is transportation companies listed on the Indonesia Stock Exchange in 2017-2021. This type of research uses quantitative data research. The method used to measure financial distress is using the Altman Z-Score. The data analysis method uses multiple linear regression analysis with data processing using SPSS 24. The results showed that the liquidity variable had a positive effect on financial distress. Solvency variables have no effect on financial distress. Profitability has a positive effect on financial distress Liquidity, solvency, and profitability affect financial distress.

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1. INTRODUCTION

Transport is a means whose purpose is to connect two or more people who are stretched between long or short distances. Transportation is also one part of the economic system and transportation plays an important role in national development (Badan Pusat Statistik Indonesia, 2020). Transportation services are a very important facility in public life, transportation is used to expedite daily activities, of course everyone needs transportation in various activities such as work, going to school, travel or other activities (Pitaloka, 2020)

According to the Central Statistics Agency (BPS), the data on the cumulative GDP growth rate of the transportation sector has decreased every year, as can be seen in the graph above. The most significant decline occurred in 2020, namely -15.05%, the decline was due to covid-19 which previously in 2019 was 6.38% and in 2021 began to increase by 3.24%, although it has increased but it is still far from 2017, 2018, and 2019. With the decline in the growth rate in the transportation sector, it can indicate financial distress which leads to company bankruptcy.

According to (Rifanda et al., 2023) financial distress is a condition where the company faces financial difficulties, financial distress can be predicted based on the company's inability or unavailability of funds to pay its obligations that have passed maturity.

One way to measure the occurrence of financial distress is to use financial ratios. Financial ratios can be classified into liquidity, solvency, activity, and profitability ratios. Liquidity ratios are used to assess the company's ability to meet short-term obligations. Liquidity ratios are important because failure to pay short-term obligations can lead to company bankruptcy. The solvency ratio is the ability of a company to meet short-term or long-term obligations with the guarantee of assets or assets owned by the company so that the company is liquidated or closed. The activity ratio

measures the company's ability to use its assets. And the profitability ratio shows how well the company's ability to earn profits using its capital (Loho et al., 2021).

Based on previous research according to (Suryaningsih et al., 2023) the results showed that simultaneously liquidity, solvency, and profitability have a significant effect on financial distress. Partially, liquidity has a positive effect, solvency has a negative effect, and profitability has a negative effect on financial distress.

2.   RESEARCH METHOD

In this study the authors will discuss the Analysis of Liquidity, Solvency, and Profitability Ratios in Transportation Sub-Sector Companies Listed on the IDX in 2017-2021. This research was conducted at transportation sub-sector companies that can be accessed through the website and www.idx.co.id. The research time was carried out from September 2022 until completion. This research will focus on Financial Ratio Analysis of transportation sub-sector companies. This type of research uses quantitative data research because it uses calculations in several ratios as a means of measuring whether a company has the potential to go bankrupt or not. (Azhani et al., 2023). This study uses secondary data derived from the financial position reports of transportation sub-sector companies published on the website and www.idx.co.id. Secondary data sources are research data obtained indirectly and through intermediary media. The source of this research data is obtained from the financial position report, because the financial statements present financial information belonging to the parent company. Accurate data and information is the key to writing the company's annual report. The content of the annual report is a financial report or achievement of the company's performance for one year so that this report greatly supports researchers in obtaining the data needed. Population is a collection of elements that show certain properties that can be used to make conclusions (Mutmainah et al., 2021). The population of this study are transportation sub-sector companies listed on the Indonesia Stock Exchange in the 2017-2021 period. There are 46 companies incorporated in the transportation sub-sector listed on the Indonesia Stock Exchange.

The sample is part of the population in a study. The sample selection was carried out using purposive sampling method. The criteria used are:
1.   The company has been listed on the IDX during the 2017-2021 period
2.   The company has a complete annual financial report published during the 2017-2021 period.
3.   The list of selected sub-sector companies is:

Table 1. Sub-Sector Companies

No	code	Company name
1	BIRD	PT Blue Bird Tbk
2	CMPP	PT Indonesia AirAsia Tbk
3	DEAL	PT Dewata Freightinternasional Tbk
4	GIAA	PT Garuda Indonesia Tbk
5	HITS	PT Humpuss Intermoda Transportasi Tbk
6	WEHA	PT Weha Transportasi Indonesia Tbk
7	INDX	PT Tanah Laut Tbk
8	LEAD	PT Logindo Samuderamakmur Tbk
9	LRNA	PT Ekasari Lorena Transportasi Tbk
10	MIRA	PT Mitra Internasional Resources Tbk
11	SDMU	PT Sidomulyo Selaras Tbk
12	TAMU	PT Pelayaran Tamarin Samudra Tbk

Data collection techniques in this study using literature study and documentation. Literature study used in this study by collecting secondary data through journals, articles, and previous research that is in accordance with the research. The documentation study was carried out by collecting secondary data obtained from the website and www.idx.co.id. The data analysis technique in this research is descriptive analysis technique. The purpose of each method and analysis technique is to simplify the data so that it can be better understood.

Hypothesis Development
Liquidity Relationship (Current Ratio) to Financial distress
Current Ratio is a ratio that measures the company's ability to pay its short-term liabilities with available assets (Handhika et al., 2022). A high Current Ratio indicates that the company's ability to meet its short-term obligations with current assets is also high (Panggabean & Kacabiru, 2017).

This is supported by research (Islamiyatun et al., 2021) with the title "The Effect of Profitability, Liquidity, and Solvency on Financial Distress Conditions" with the results of the research showing that the liquidity ratio has a positive effect on financial distress. Similar research was conducted by (Maulida et al., 2021) with the title "Financial Ratio Analysis to Predict Financial Distress in Manufacturing Companies Listed on the Indonesia Stock Exchange 2014-2016" with results showing that the liquidity ratio has a positive effect on financial distress. This shows that the lower the liquidity results, the greater the potential for the company to experience financial distress.
H1: Liquidity has a positive effect on financial distress.

Solvency Relationship (Debt to Equity Ratio) to financial distress
The solvency ratio is a ratio used to measure the extent to which the company's assets are financed with debt. That is, how much debt burden the company bears compared to its assets (Gatha & Hernawan, 2022). The greater the amount of assets owned by the company, the more stable the company will be and stronger to face the threat of financial distress. Conversely, if the company's assets are low, the company is more easily exposed to financial distress.

This is supported by (Ginanjar & Rahmayani, 2021) with the title "The Effect of Liquidity, Solvency, and Profitability on Financial Distress in Manufacturing Companies in the Consumer Goods Industry Sector Listed on the Indonesia Stock Exchange (IDX) for the 2015-2019 Period. with the results showing that solvency partially has no effect on financial distress in mining sector companies listed on the Indonesia Stock Exchange in the 2015-2019 period. Similar research was conducted by (Islamiyatun et al., 2021) with the title "The Effect of Profitability, Liquidity, and Solvency on Financial Distress Conditions" the results showed that solvency had no effect on financial distress.
H2: Solvency has no effect on financial distress

Relationship of profitability (Return on Asset) to financial distress
According to (Ningrum et al., 2022) Profitability ratio is a ratio used to assess the company's ability to earn profits and is a measure of the effectiveness of company management.

Previous research conducted by (Habil & Laily, 2018) with the title "The Effect of Liquidity, Solvency, and Profitability on Financial Distress Prediction in Telecommunication Subsector Companies Listed on the Stock Exchange" with the results of profitability has a positive effect on financial distress. Similar research was also conducted by (Islamiyatun et al., 2021) with the title "The Effect of Profitability, Liquidity, and Solvency on Financial Distress Conditions" with the results of the profitability ratio having a positive effect on financial distress. This shows that the greater the profitability value, the less likely the company will experience financial distress.
H3: Profitability has a positive effect on financial distress

Effect of Liquidity, Solvency, and Profitability on financial distress
According to research (Fauzan & Situngkir, 2022)with the title "The Effect of Liquidity, Solvency and Profitability Ratios on Financial Distress in Retail Trade Sub-Sector Companies (Indonesia Stock Exchange 2016-2020 Period)" simultaneously liquidity, solvency and profitability ratios have an influence on financial distress in retail trade sub-sector companies listed on the Indonesia Stock Exchange 2016-2020 period. Similar research was also conducted by (Pinastiti et al., 2023) with the title "The Effect of Financial Ratios on Financial Distress During the Covid-19 Pandemic in Hospitality Companies Listed on the Indonesia Stock Exchange" All independent variables, namely liquidity, solvency, and profitability ratios together have an effect on financial distress proxied by z-score in hospitality companies for the 2019-2020 period.
H4: Liquidity, Solvency, and Profitability simultaneously have an influence on financial distress.

3.   RESULT AND DISCUSSION
Independent Variable Data
Liquidity
The following is liquidity data measured in current ratio (CR) in transportation companies listed on the Indonesia Stock Exchange in 2017-2021. Current Ratio is a ratio that measures the company's ability to pay its short-term liabilities with available assets.

Table 1. Results of Current Ratio (CR) Calculation 2017-2021

No	Code	Year				
		2017	2018	2019	2020	2021
1	BIRD	2,02	1,74	1,25	1,94	2,42
2	CMPP	0,26	0,16	0,47	0,03	0,03
3	DEAL	0,82	1,24	1,00	0,76	0,53
4	GIAA	0,51	0,55	0,35	0,12	0,05
5	HITS	0,98	0,85	0,72	0,58	0,83
6	WEHA	0,43	0,43	0,52	0.37	0,44
7	INDX	154,09	421,99	3,97	8,30	6,02
8	LEAD	0,89	0,69	1,39	3,24	3,23
9	LRNA	1,39	1,65	2,28	0,80	1,01
10	MIRA	2,42	4,69	1,59	1,17	1,10
11	SDMU	1,07	1,04	0,12	0,30	0,29
12	TAMU	0,77	0,41	0,23	1,49	1,99
Average Value		13,80	36,28	1,45	1,70	1,49
Maximum		154,09	421,99	3,97	8,3	6,02
Minimum		0,26	0,16	0,23	0,03	0,03

Solvency Ratio
The following is Solvency data measured in Debt to Equity Ratio (DER) in transportation companies listed on the Indonesia Stock Exchange in 2017-2021. DER ratio or Debt to Equity Ratio is a ratio to measure the company's ability to meet its total debt using its own capital.

Table 2. Results of Debt to Equity Ratio Calculation 2017-2021

No	Code	Year				
		2017	2018	2019	2020	2021
1	BIRD	0,32	0,32	0,37	0,39	0,28
2	CMPP	82,38	-4,55	11,93	-3,09	-1,99
3	DEAL	7,67	1,02	1,19	2,75	-5,87
4	GIAA	3,01	3,80	5,18	-6,55	-2,18
5	HITS	3,23	2,70	2,24	2,28	2,52
6	WEHA	0,97	1,17	0,78	1,03	1,05
7	INDX	0,01	0,01	0,12	0,15	0,22
8	LEAD	1,14	2,17	2,72	2,74	2,88
9	LRNA	0,21	0,16	0,16	0,24	0,25
10	MIRA	0,63	0,43	0,50	0,47	0,48
11	SDMU	0,73	0,88	0,51	0,96	1,01
12	TAMU	0,99	0,95	1,13	1,04	0,97
Average Value		8,45	0,75	2,23	0,20	-0,31
Maximum		82,38	3,80	11,98	2,75	2,88
Minimum		0,01	-4,55	0,12	-6,55	-5,87

Profitability Ratio

The following is Profitability data measured in Return on Asset (ROA) in transportation companies listed on the Indonesia Stock Exchange in 2017-2021. ROA (Return on Asset) is a ratio used to assess the company's ability to use its assets to generate profits.

Table 3. Results of Return on Asset Calculation 2017-2021

No	Kode	Tahun				
		2017	2018	2019	2020	2021
1	BIRD	6,56	6,62	4,25	-2,25	0,13
2	CMPP	-16,59	-31,88	-6,02	-45,30	-45,40
3	DEAL	112,60	94,54	46,16	47,79	-16,68
4	GIAA	-5,67	0,11	3,30	-20,42	-55,09
5	HITS	5,70	6,35	6,45	3,28	-5,77
6	WEHA	16,81	0,96	1,68	-14,01	-4,27
7	INDX	153,39	437,95	1,60	-0,08	-1,57
8	LEAD	-9,95	-28,97	-5,47	-1,91	-1,94
9	LRNA	-14,48	-9,08	-0,16	-0,94	-9,72
10	MIRA	5,37	0,18	-0,92	-5,75	-4,38
11	SDMU	-9,81	-8.50	-16,63	-0,95	5,76
12	TAMU	-2,88	-3,83	-11,65	-1,13	-6,23
Nilai Rata-Rata		20,09	42,99	3,51	-3,32	-13,02
Maximum		153,39	437,97	46,16	47,79	5,76
Minimum		-16,59	-31,88	-11,65	-45,30	-55,09

a.   *Financial Distress*

The Altman Z-Score model is a Multiple Discriminant Analysis conducted by Altman, namely Z-Score analysis where the Z-Score formula in predicting bankruptcy from Altman is a multi-variate formula used to measure the financial health of a company. In this study, the z-score model used is the 1995 modified Altman Z-Score Model with the formula:

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

Table 4. Financial Distress Results 2017-2021

No	Code	Year				
		2017	2018	2019	2020	2021
1	BIRD	5,20	5,36	4,27	3,84	5,42
2	CMPP	-8,60	-15,52	-10,80	-11,90	-14,54
3	DEAL	-0,65	1,73	0,88	-2,75	-6,78
4	GIAA	-2,11	-2,31	-3,55	-5,39	-13,60
5	HITS	0,69	0,75	0,82	0,17	-0,10
6	WEHA	1,73	0,20	0,92	-1,26	-0,45
7	INDX	75,22	160,97	8,35	5,88	3,58
8	LEAD	0,25	-2,65	-0,76	-0,17	-0,10
9	LRNA	3,79	5,42	6,22	1,99	1,78
10	MIRA	-8,67	-8,24	-9,55	-11,66	-12,52
11	SDMU	-0,68	-0,79	-0,79	-7,44	-7,13
12	TAMU	1,30	0,87	-1,02	1,42	1,16

Data Analysis
Normality Test

The normality test aims to determine the distribution in the variables that will be used in the study. The following is a normality test that has been carried out.
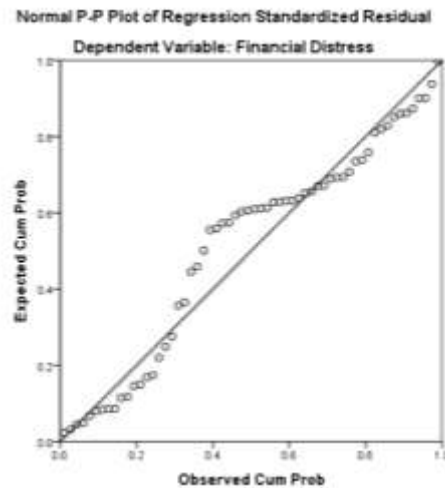
Figure 1. Normality Test
Source: data processed from SPSS 24 2023

Good data to use is data that is normally distributed. The picture above presents the results of the P-Plot normality test, where the results show that the points spread around the diagonal line, which means that the variables are normally distributed.

Multicollinearity Test

Multicollinearity test Conducted to determine whether or not there is a high correlation between the independent variables can be seen from the tolerance value and variance inflation factor with a tolerance value> 0.1 and a variance inflation factor (VIF) value <10,000, the multicollinearity test results can be seen in table 5:

Table 5. Multicollinearity Test Results

Model	Unstandardized Coefficients		Coefficients[a] Standardized Coefficients			Collinearity Statistics	
	B	Std. Error	Beta	t	Sig	Tolerance	VIF
1 (Constants)	-1.893	.762		-2.485	.016		
Likuiditas	.327	.033	.792	9.789	.000	152	6.579
Solvabilitas	-.003	.046	-.002	-058	.954	1.000	1.000
Profitabilitas	.070	.030	.192	2.371	.021	152	6.579
a. Dependent Variable: *Financial Distress*							

Source: data processed from SPSS 24 2022

The data Table 5, show the results of the multicollinearity test in table 5 of the tolerance and VIF section of the liquidity variable, namely 6.579 with a tolerance of 0.152, the solvency variable is 1.000 with a tolerance of 1.000 and the profitability variable is 6.579 with a tolerance of 0.152. The tolerance value of the three variables> 0.01 and VIF of the three variables < 10,000, so it can be said that there is no multicollinearity.

Heteroscedasticity Test

The heteroscedasticity test aims to test whether in the regression model there is an inequality of variance from the residuals of one observation to another. The measure used to test whether heteroscedasticity occurs is to look at the significance value of the t-test. This can be seen from the probability of significance above the 0.05 confidence level.

Table 6. Heteroscedasticity Test Results

Coefficientsa

Model	Unstandardized Coefficients		Standardized Coefficients	t	sig
	B	Std. Error	Beta		
1 (Constant)	4.367	.429		10.188	.000
Likuiditas	.028	.019	.499	1.506	.138
Solvabilitas	-.009	.026	-.045	-.348	.729
Profitabilitas	-.015	.017	-.305	-.921	.361
a. Dependent Variabel: *Financial Distress*					

Source: data processed from SPSS 24 2022

The results of the Glejser test to detect symptoms of heteroscedasticity in table 6, can be explained as follows:

1. The significant value of the independent variable liquidity (X1) is 0.138, where the value is greater than 0.05. So it can be concluded that the independent variable liquidity (X1) does not have symptoms of heteroscedasticity.
2. The significant value of the independent variable solvency (X2) is 0.729, where the value is greater than 0.05. So it can be concluded that the independent variable solvency (X2) does not have symptoms of heteroscedasticity.
3. The significant value of the independent variable profitability (X3) is 0.361, where the value is greater than 0.05. So it can be concluded that the independent variable profitability (X3) does not have symptoms of heteroscedasticity.

Hypothesis Test
Partial Test (t)

Table 7. Partial Test Results (t)

Coefficientsa

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	-1.893	.762		-2.485	.016		
Liquidity	.327	.033	.792	9.289	.000	152	6.579
Solvency	-.003	.046	-.002	-.058	.954	1.000	1.000
Profitability	.070	.030	.192	2.371	.021	152	6.579
a. Dependent Variable : *Financial Distress*							

Based on the results of hypothesis testing (t test) as shown in table 7, the following conclusions can be drawn:

1. Liquidity variable on financial distress shows the tcount of (9.789). tcount> ttable (9.789> 2.003), and a significance value of 0.000 where the sig value is smaller than 0.05, it means that liquidity has a positive effect on Financial Distress.
2. Solvency variable on financial distress shows the result of tcount of (-0.058). tcount < ttable (-0.058 < 2.003), and a significance value of 0.954 where the sig value is greater than 0.05, it means that solvency has no effect on Financial Distress.
3. The profitability variable on financial distress shows the tcount of (2.371). tcount> ttable (2.371> 2.003), and a significance value of 0.021 where the sig value is smaller than 0.05, it means that profitability has a positive effect on Financial Distress.

Simultaneous Test (F Test)

Table 8. Simultaneous Test Results (F Test)

ANOVAa

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	31456.664	3	10485.555	316.211	.000b
Residual	1856.961	56	33.160		
Total	33313.625	59			

a.   Dependent Variable : *Financial Distress*
b.   Predictors: (Constant), Profitabilitas, Solvabilitas, Likuiditas

Source of data processed from SPSS 26 2022

Based on table 8. It can be seen that the significance value of 0.000 is smaller than 0.05 and the Fcount value of 316.211 is greater than Ftable 2.77. So it can be concluded that liquidity, solvency, and profitability simultaneously affect financial distress.

Coefficient of Determination (R^2)

The coefficient of determination (R^2) is used to determine how much the ability of the independent variable can explain the dependent variable. Where the coefficient of determination is between zero and one. A small R^2 value is the ability of the independent variables to explain the limited dependent variable. The results of the coefficient of determination (R^2) can be seen in table 9 below:

Table 9. Determination Coefficient Test Results (R^2)

Model Summaryb

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.972a	.944	.941	5.75847	.971

a.   Predictors: (Constant), Profitabilitas, Solvabilitas, Likuiditas
b.   Dependent Variable: *Financial Distress*

Source data processed from SPSS 24

From table 9, it is known that the R Square value is 0.944 or 94.4%, which indicates that there is a simultaneous influence between the independent variables on the dependent variable of 94.4% and the remaining 5.6% is influenced by other variables.

Discussion
The Effect of Liquidity on Financial Distress
Based on the results of the hypothesis test, it is known that the significance value is 0.000 which is smaller than the value of the significance decision-making criteria of 0.05, it can be concluded that liquidity has a positive influence on financial distress.According to (Tyas, 2020) the liquidity ratio is a ratio that describes the company's ability to meet short-term obligations that will soon be due. Based on the results of the hypothesis of the effect of liquidity on financial distress, it shows that if the company begins to have difficulty in fulfilling debt bills, and other obligations, this will increase the company's current debt, so that over time the company's current debt will be more than current assets, this indicates that there is a problem in the company that will lead to financial distress. This means that if the company's liquidity ratio is high, the possibility of the company experiencing financial distress is greater, otherwise if the company's liquidity ratio is low, the possibility of experiencing financial distress is smaller.The results of this study are in line with research conducted by (Suryaningsih et al., 2023) and (Destiani et al., 2023) which state that liquidity has a positive effect on financial distress. However, this research is not in line with research conducted by (Baghaskara & Retnani, 2023) which states that liquidity has a negative effect on financial distress.

The Effect of Solvency on Financial Distress
Based on the results of the hypothesis, it is known that the significance value is 0.954 which is greater than the value of the significance decision-making criteria of 0.05, it can be concluded that solvency has no effect on financial distress. According to (Aisyah et al., 2017) the solvency ratio is a ratio that

describes the company's ability to meet all obligations, both long-term and short-term obligations. The solvency ratio used, namely debt to equity, is obtained from total debt divided by total equity, which means that the company's ability to meet its long-term obligations uses the equity or capital it has. The size or size of the DER value does not affect whether the company is experiencing financial difficulties or not. The results of this study are in line with research conducted by (Destiani et al., 2023) and (Andriyani et al., 2018) which state that solvency has no effect on financial distress. however, this research is not in line with research conducted by (Baghaskara & Retnani, 2023) which states that solvency affects financial distress.

Effect of Profitability on Financial Distress
The results of the hypothesis are known to have a significance value of 0.021 which is smaller than the significance decision-making criteria of 0.05, it can be concluded that profitability has a positive effect on financial distress. According to (Yusrany et al., 2023) the profitability ratio is a ratio used to measure the company's ability to generate profits or corporate profits. If the company has a low profitability value, this indicates that the company has a low net profit, if the profitability value is high, the company has a high net profit. The higher the net profit margin, the more the company earns net profit. If this ratio is low, the greater the company experiences financial distress predictions, because the lower the profit will worsen the company's financial condition. The results of this study are in line with research conducted by (Fauzan & Situngkir, 2022) and (Andriyani et al., 2018) which state that profitability has a positive effect on financial distress. however, in research conducted by (Suryaningsih et al., 2023) that profitability has no effect on financial distress.

Simultaneous Effect of Liquidity, Solvency, and Profitability on Financial Distress
Based on the test results that have been carried out in this study, it states that liquidity, solvency, and profitability ratios affect financial distress. It can be seen that the significance value of $0.000 < 0.05$ and the Fcount value of $316.211 >$ Ftable 2.77. So it can be concluded that liquidity, solvency, and profitability simultaneously affect financial distress. The results of the study are also in accordance with signal theory which states that management actions provide information to investors who can interpret the information received.

4.   CONCLUSION
Based on the results of the analysis and discussion above, it can be concluded that the liquidity variable has a positive effect on financial distress. The solvency variable has no effect on financial distress. Profitability has a positive effect on financial distress.

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