ALMANA
Jurnal Manajemen dan Bisnis

Determination of Bankruptcy Potential in Indonesian Transportation Companies After the COVID-19 Pandemic

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Abstract: This study examines the factors influencing bankruptcy risk among transportation companies after COVID-19 listed on the Indonesia Stock Exchange during 2017–2024 using the Grover model. The model serves as an early warning system by integrating financial ratios relevant to the transportation sector, including Total Asset Turnover, Current Ratio, and Debt-to-Equity Ratio. Secondary data were obtained from official financial reports published on the IDX website and company websites. The research employs purposive sampling, resulting in nine companies as the sample, and applies Panel Data Regression Analysis. Analytical procedures include descriptive and verification analysis, model selection, classical assumption testing, coefficient of determination, and hypothesis testing using t-tests and F-tests, processed with EViews 13. The descriptive results indicate significant fluctuations in TATO, CR, DER, and G-Score values during the study period. Empirical findings reveal that TATO has no significant effect on bankruptcy risk, CR has a significant negative effect, and DER has a significant positive effect on bankruptcy risk based on the Grover model. These findings highlight the importance of liquidity and leverage management in mitigating financial distress within the transportation sector.

INTRODUCTION

The transportation industry is one of the fundamental sectors that has evolved since the early stages of civilization and continues to undergo transformation alongside technological advancements, ultimately becoming an integrated and complex system. For an archipelagic country like Indonesia, transportation plays a strategic role in supporting various aspects of life, ranging from economic and social to cultural dimensions. This sector serves as a primary driver of the economy through the distribution of goods and services, while also acting as a connector between regions, facilitating people's mobility and opening access to new economic opportunities. With this role, transportation becomes a key factor in improving productivity and ensuring equitable development across all regions of Indonesia.

Indonesia's transportation sector itself encompasses various modes, such as land, sea, and air transportation, each contributing significantly to supporting public mobility

and economic activities. As one of the vital sectors, transportation plays a strategic role in ensuring the smooth distribution of goods and services, which ultimately drives national economic growth. The contribution of this sector to Indonesia's Gross Domestic Product (GDP) is also significant, particularly through the land, sea, and air transportation subsectors, as illustrated in the report from the Ministry of Transportation of the Republic
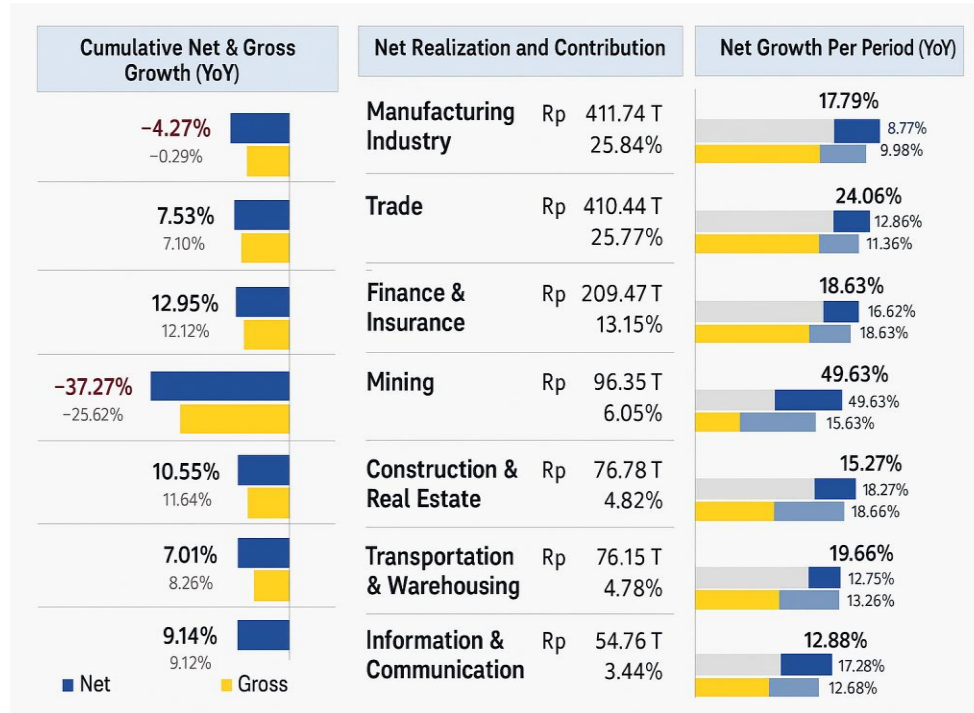
of Indonesia, as follows:

Figure 1. Cumulative Sector Contribution to Indonesia's Gross Domestic Product
Source: Kementrian Perhubungan Republik Indonesia (2025)

Based on these data, it is evident that the transportation sector makes a significant contribution to the national economy, both through tax revenues and non-tax state revenues (PNBP), which in 2024 reached trillions of rupiah and provided a net contribution to tax revenues of 4.78%. The largest contribution comes from maritime transportation services, followed by air, rail, and land transportation. This demonstrates that transportation is not merely a means of mobility but also a primary driver of economic growth through enhanced connectivity, logistical efficiency, and national competitiveness. In addition to supporting the distribution of goods and services, this sector serves as the backbone of international trade, accelerates investment flows, and promotes equitable development, making it a strategic element in strengthening Indonesia's economic competitiveness (Arafah & Maria, 2024).

The role of the transportation sector in contributing substantially to Gross Domestic Product significantly supports national economic growth and state revenues (Piana & Hidayat, 2023). Therefore, transportation should not be viewed solely as a provider of mobility services but as a critical factor in fostering national economic growth. Transportation subsectors play a strategic role in driving GDP growth through improved connectivity, logistical efficiency, and economic competitiveness. In international trade, the air transportation subsector serves as a backbone for global trade mobility. Kusdimanto & Nurmatias (2023) note that this sector facilitates the export and import of high-value goods and enables faster product delivery. It also accelerates investment by

opening access to new markets, thereby attracting foreign capital, and supports equitable economic development by connecting remote regions.

In fulfilling its strategic role, the transportation sector is an essential element in strengthening economic competitiveness. Nevertheless, the dynamics of the transportation industry are not immune to various challenges, both external and internal. The COVID-19 pandemic was one of the major external factors that had a profound impact, causing a significant decline in transportation companies' revenues. Azzahra & Pangestuti (2022) explain that the pandemic led to widespread revenue losses in the transportation sector; however, this situation also spurred innovation, such as technology-based delivery services to meet public needs. The turbulence was marked by a sharp decline in transportation companies' revenues in 2020 due to mobility restrictions and changes in consumer behavior. For instance, PT Garuda Indonesia Tbk reported a net loss of IDR 10.47 trillion in the first half of 2020, a drastic drop compared to profits in the same period of the previous year. PT Blue Bird Tbk also recorded a loss of IDR 93.67 billion, while PT Express Transindo Utama Tbk posted a loss of IDR 43.44 billion during the same period. Although recovery occurred in 2022–2023, significant revenue fluctuations over the past seven years indicate vulnerability to bankruptcy risks. Internal factors such as operational efficiency, innovation, and debt management also influence the financial stability of these companies.
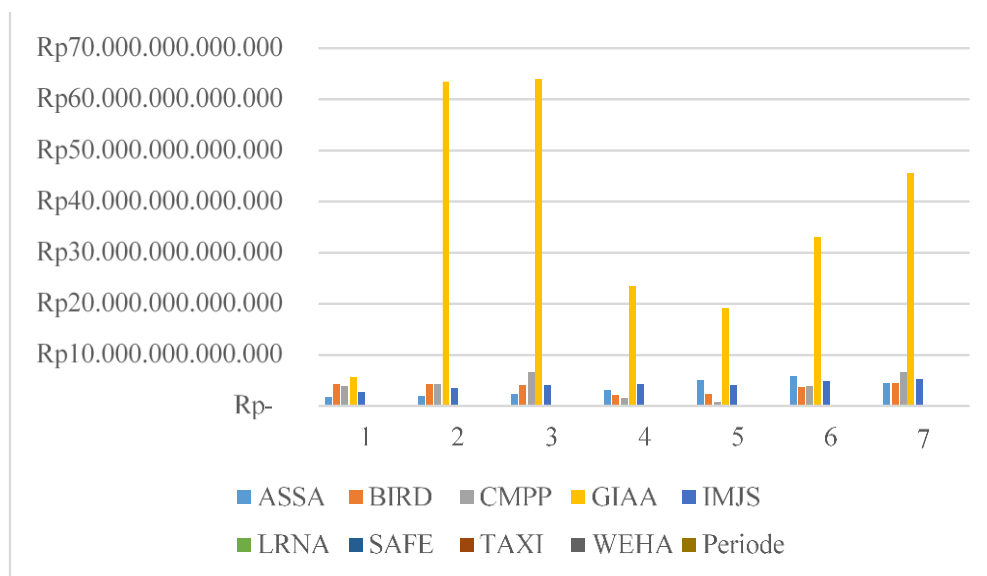
Figure 2. Distribution of Revenue of Indonesian Transportation Companies
Source: Data that has been processed by the author (2025)

Based on Figure 2, the revenue of companies in the transportation sector shows a trend of financial dynamics, with a significant decline in revenue occurring in 2020. Restrictions on mobility, border closures, and changes in consumer behavior impacted transportation companies' earnings. The effect of the COVID-19 pandemic on this sector was a financial crisis faced by transportation companies. However, revenue began to recover in 2022–2023 within the transportation subsectors. This indicates that fluctuations in transportation subsector revenues over the past seven years have been quite significant. This phenomenon can be attributed to various factors, including external factors such as the COVID-19 pandemic, which had a major impact on the sector.

Furthermore, internal company factors, such as the company's ability to innovate, implement operational efficiencies, and diversify services, also play a crucial role in financial stabilization and revenue growth(Girsang, 2023). Therefore, analyzing the dynamics of rising and falling revenues in the transportation subsector is crucial to understanding the factors influencing financial performance and the potential risk of bankruptcy in this sector (Haryani & Syafei, 2023).

Corporate bankruptcy has far-reaching consequences, not only for shareholders who lose investment value but also for employees, creditors, and the economy as a whole. Its impact includes rising unemployment, declining purchasing power, and weakening demand for goods and services, ultimately slowing economic growth (Satriadi, 2024). Furthermore, bankruptcy can disrupt supply chains because many companies are interdependent, creating a domino effect on other sectors. Therefore, according to Sukamulja (2021), early detection of bankruptcy risk is essential, especially in the transportation sector, which plays a strategic role. Mitigation efforts can be implemented through digitalization-based operational efficiency, service diversification, prudent debt management, and strengthening data analytics to predict risks. Improving financial literacy and risk management awareness is also key for management and stakeholders to maintain their business continuity. Transportation company bankruptcies can have widespread effects, from investor losses and rising unemployment to supply chain disruptions that impact the national economy.

Early identification of potential bankruptcy is therefore critical. Various prediction models have been developed, such as Altman Z-Score, Springate, Zmijewski, and Grover (Rebin & Suharyono, 2020). Among these, the Grover model has proven effective in projecting the likelihood of financial failure in transportation companies, supported by previous research validating its accuracy. For instance, Maulidia (2020) found that the Grover model achieved the highest accuracy rate of 95% compared to other models in identifying companies at risk of bankruptcy. Another study by Fitriyani (2023)also showed that the Grover model had the highest accuracy level at 78%, outperforming the other three models. Similarly, research by Melia & Deswita (2020)on bankruptcy prediction in transportation companies indicated that the Grover model achieved the highest accuracy rate of 76%. The financial ratios used in the Grover model are more relevant for analyzing bankruptcy predictions in transportation companies because they include ratios such as (EBIT to Total Assets), which clearly illustrates a company's ability to generate profit from its assets; (Working Capital to Total Assets), which assesses how well a company can meet short-term obligations where liquidity is crucial for transportation companies; and (Net Income to Total Assets), which provides insight into the efficiency of generating profit from total assets.

The quantitative approach used in the Grover model requires financial data from company financial statements, which serve as the primary reference in financial analysis. These documents provide an overview of a company's financial condition. In the context of the Grover model, financial statements play a critical role because they enable the calculation of financial ratios to predict potential bankruptcy. The data needed for bankruptcy prediction using the Grover model must be valid and structured. These financial statements are then processed through the Grover model, allowing companies to identify risks early, design mitigation strategies, and enhance competitiveness and financial stability amid increasingly intense industry competition.

Based on previous research, Fitriyani (2023), Haryani & Syafei (2023), Peter et al. (2021), Winaya et al. (2020), this study was conducted to provide a deeper understanding of the bankruptcy risk of transportation sector companies listed on the Indonesia Stock Exchange (IDX), using the Grover Model as the primary analytical tool. The Grover Model was chosen because of its ability to predict bankruptcy more accurately than several classical models, thus the analysis results are expected to

provide a realistic picture of the financial condition of companies in this sector. The first focus of the study is to identify bankruptcy prediction results based on the Grover Model, which will indicate whether the company is in the safe, vulnerable, or high-risk category of bankruptcy. In addition, this study also examines the effect of certain financial ratios on bankruptcy risk, starting with Total Assets Turnover, which reflects the company's effectiveness in utilizing assets to generate sales. This ratio is important because a high asset turnover rate usually indicates operational efficiency, which can reduce the potential for bankruptcy. Next, the study examines the Current Ratio, which measures a company's ability to meet short-term obligations with its current assets. Adequate liquidity is often an indicator of financial health, so this analysis will answer whether companies with a high current ratio tend to be safer from the risk of bankruptcy. Equally important, this study also examines the influence of the Debt to Equity Ratio, which describes a company's capital structure, specifically the proportion between debt and equity. High levels of leverage can increase interest expenses and the risk of default, potentially increasing the likelihood of bankruptcy. By examining these three financial ratios simultaneously, this study seeks to uncover the factors that most influence bankruptcy risk in the transportation sector. The results are expected to not only contribute academically to the development of the literature on bankruptcy analysis but also serve as a practical reference for company management in formulating healthier financial strategies, as well as for investors and stakeholders in making wiser investment decisions. Overall, this study aims to answer fundamental questions about the actual conditions of transportation companies listed on the IDX and the extent to which certain financial ratios can influence the level of bankruptcy risk, thereby providing useful insights for business sustainability amidst increasingly complex economic dynamics.

METHODS

This research uses a quantitative approach with descriptive and verification methods. The quantitative approach was chosen because this research is based on the philosophy of positivism, uses numerical data, and is analyzed using statistical techniques to test the established hypotheses (Sugiyono, 2022). According to Singarimbun and Efendi (2018), the quantitative method was used because it meets scientific principles: empirical, objective, measurable, rational, and systematic. The descriptive method is used to describe the condition of the company's financial ratios and bankruptcy scores, while the verification method is used to test the effect of independent variables on bankruptcy risk using the Grover model, which has been proven to have the highest level of accuracy in predicting bankruptcy in transportation companies compared to the Altman, Springate, and Zmijewski models (Komarudin et al., 2019; Peter et al., 2021).

The study population was all 37 companies in the transportation and logistics sector listed on the Indonesia Stock Exchange (IDX) for the 2017–2024 period. The sample selection was conducted using a purposive sampling technique, which is based on certain criteria, including companies in the transportation sub-sector listed on the Indonesia Stock Exchange (IDX), complete financial reports during the study period, and an IPO held at least in 2015. Based on these criteria, nine companies were selected as research samples, resulting in a total of 252 observations (9 companies × 7 years × 4 quarters). The data used were secondary data, consisting of annual financial reports accessed through the official IDX website and the company websites. Secondary data was chosen because it is objective and verifiable (Wahyuning, 2021). Furthermore, relevant literature can serve as supporting primary data to strengthen the theoretical foundation.

This study used the dependent variable derived from the Grover Model analysis. The independent variables used in this research model were Total Asset Turnover (TATO), Current Ratio (CR), and Debt to Equity Ratio (DER) for each transportation company directly impacted by the COVID-19 pandemic. In this study, the analysis was conducted in two stages. The initial stage involved a descriptive analysis to describe the condition of the financial ratios and G-Score using statistical measures such as mean, maximum, minimum, and standard deviation (Fitri et al., 2023). Then, a verification analysis using panel data regression was conducted to test the effect of independent variables on the G-Score in all companies in the selected sample. The selection of a panel data regression model was carried out to determine the most appropriate approach in estimating the relationship between variables. There are three main models used in panel data analysis: the Common Effect Model (CEM), the Fixed Effect Model (FEM), and the Random Effect Model (REM). To select the best model, a series of tests were conducted, namely the Chow Test, the Hausman Test, and the Lagrange Multiplier Test Budiman (2025). After finding the best model, the following regression equation was created:

$$\text{G-Score}_{it} = \beta 0 + \beta 1(\text{TATO}_{it}) + \beta 2(\text{CR}_{it}) + \beta 3(\text{DER}_{it}) + \varepsilon_{it}$$

Hypothesis testing was conducted using three main approaches. The t-test was used to examine the effect of each independent variable on the dependent variable individually. The decision-making criteria were that if the calculated t-value ≥ t-table and the p-value ≤ 0.05, then the alternative hypothesis (H_1) was accepted, meaning the independent variable had a significant effect on the dependent variable. If the calculated t-value < t-table and the p-value > 0.05, then the null hypothesis (H_0) was accepted, meaning the independent variable had no significant effect.

An F-test was also used to examine the effect of all independent variables simultaneously on the dependent variable. The decision-making criteria were: if the calculated F-value ≥ F-table and the p-value ≤ 0.05, then H_1 was accepted, meaning all independent variables simultaneously had a significant effect on the dependent variable. The coefficient of determination was used to measure the model's ability to explain variation in the dependent variable. An Adjusted R^2 value approaching 1 indicates that the model has a good ability to explain the dependent variable, while a low value indicates that the independent variable only explains a small part of the variation in the dependent variable (Gujarati, 2020).

RESULTS AND DISCUSSION

The research objects in this study are companies operating in the transportation sector and listed on the Indonesia Stock Exchange (IDX) during the period 2017 to 2024. Based on available data, the number of companies listed in the sector during the study period reached 37 entities. However, after a selection process based on predetermined sample criteria, only 9 companies met the requirements for further analysis. The type of data used in this study is secondary data, obtained from various reliable sources. The main source of data comes from the official website of the Indonesian Stock Exchange, supplemented by relevant theories from academic literature, including reference books and previous research results that support the conceptual framework of this study. In addition, financial report data from companies listed on the IDX is also used as analytical material to answer the problem formulation and test the research hypotheses.
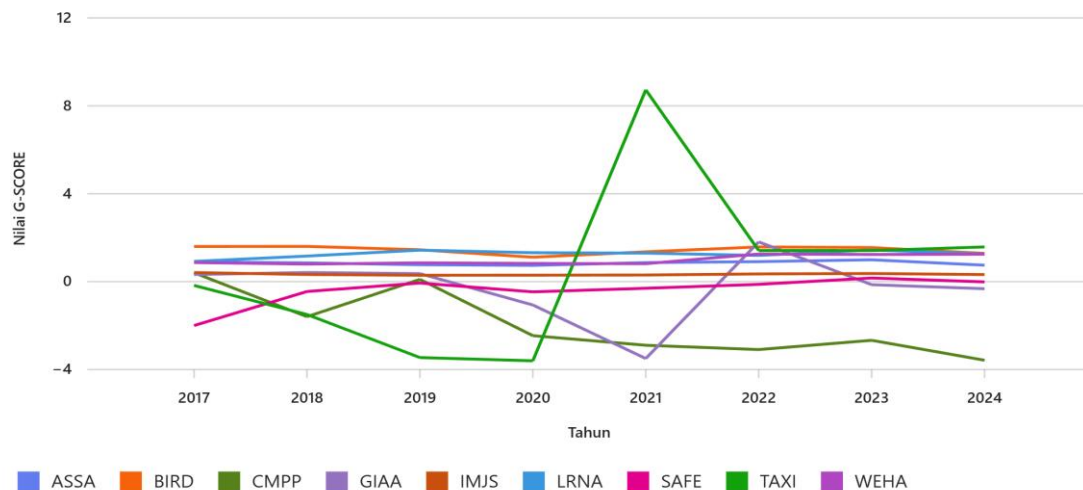
Figure 3. G-Score Data for Indonesian Transportation Companies 2017-2024
Source: Data that has been processed by the author (2025)

The G-Score calculations for several transportation companies listed on the Indonesia Stock Exchange show significant variations in their financial condition. Several companies, such as ASSA, BIRD, IMJS, LRNA, and WEHA, consistently rank in the healthy category, despite experiencing fluctuations over time. Declines in G-Scores, such as ASSA's in 2024 or BIRD's in 2020, do not alter their overall financial health. This indicates that these companies have relatively stable financial performance and show no signs of bankruptcy.

Conversely, there are companies, such as CMPP and GIAA, whose G-Scores indicate less favorable financial conditions. CMPP experienced a significant decline from 2019 to 2024, placing them in the bankruptcy category. Similarly, GIAA has exhibited sharp fluctuations and has also been in the bankruptcy category in recent periods. These findings reflect unstable financial performance that could potentially lead to bankruptcy if improvements in business strategy and financial management are not implemented. SAFE companies exhibit interesting dynamics, experiencing a change in their financial status from bankruptcy in 2017–2020 to a healthy status in 2021. This change indicates significant improvements in the company's financial management. Overall, the G-Score analysis provides a clear picture of each company's financial health, providing a basis for decision-making for investors and company management in formulating future strategies.

Based on the descriptive research results in this study, which explain the descriptive data of the dependent variable G-Score from the Groover model, and also the independent variables Total Asset Turnover, Current Ratio, and Debt to Equity Ratio in nine transportation companies. The Total Asset Turnover variable is an indicator used to evaluate a company's financial performance, specifically in measuring the efficiency of asset use(Kasmir, 2020). An increase in this value indicates a company's increasing ability to utilize assets to generate income, thus reflecting a healthier company condition. Conversely, a decrease in the value indicates low asset use efficiency and poor financial condition. Based on the research results, the highest mean value for transportation companies was 0.6135 in 2019, while the lowest mean value was 0.2282 in 2020. The maximum value was found in CMPP companies at 2.6574 in 2019, while the minimum value was found in SAFE companies at 0.0000 in 2017, due to the lack of sales during that period.

Furthermore, according to Mahmudi & Khaerunnisa (2024). the Current Ratio variable describes a company's ability to meet short-term obligations using current assets without relying on inventory. An increase indicates a healthier financial condition, while a decrease indicates a worsening financial condition. The results showed that the highest average value for transportation companies was 7.4373 in 2024, while the lowest average value was 0.5501 in 2020. The maximum value was found for taxi companies at 60.8581 in 2024, while the minimum value was found for CMPP companies at 0.0251 in 2021.

Meanwhile, the Debt to Equity Ratio is used to measure the extent to which a company relies on debt for funding and the level of financial risk it faces Jirwanto et al., 2024). An increase indicates a greater risk of bankruptcy, while a decrease indicates a lower risk. Based on the research results, the highest average score for transportation companies was 10.3490 in 2017, while the lowest average score was recorded at -2.0965 in 2024. The maximum score was found for CMPP companies at 82.3755 in 2017, while the minimum score was found for SAFE companies at -20.5077 in 2024.

According to Fauzi et al. (2023), the Grover Model is used to identify potential bankruptcy early by combining various relevant financial ratios. This model uses three main ratios in its calculations and has a cut-off criterion: if the G-Score is ≥ 0.01, the company is categorized as healthy, while if the G-Score is <-0.02, the company is categorized as bankrupt. Based on the research results, the highest average G-Score value in transportation companies was 0.7414 in 2021, while the lowest average value was recorded at -0.3666 in 2020. The maximum G-Score value was found in TAXI companies at 8.7282 in 2021, while the minimum value was found in SAFE companies at -3.60278 in 2020.

Selection of Research Model

In this study, the selection of panel data estimation models was carried out to determine the most appropriate approach. According to Widarjono (2020), there are three alternative models that can be used: the Common Effect Model (CEM), the Fixed Effect Model (FEM), and the Random Effect Model (REM). The Common Effect Model assumes that data behavior across individuals and over time is the same, while the Fixed Effect Model accommodates differences between individuals through different intercepts, and the Random Effect Model considers these differences as part of the random error component.

Determining the appropriate model requires a series of statistical tests. The Chow Test is used to compare the CEM and FEM, with the decision based on the probability value (p-value). If $p < 0.05$, the FEM is more appropriate. Next, the Hausman Test is used to choose between the FEM and REM, with a criterion of $p < 0.05$ indicating the FEM is more appropriate. The Lagrange Multiplier Test (Breusch-Pagan) is used to test for the presence of random effects in the model, which determines whether the REM is appropriate. Recent literature also emphasizes that the choice between fixed effects and random effects should consider the correlation between the independent variables and the individual effects. If there is a correlation, FEM is more appropriate because it can control for unobserved heterogeneity. Conversely, if there is no correlation, REM is more efficient because it uses Generalized Least Squares to address heteroscedasticity and autocorrelation. The following are the results of the research model selection:

Table 1. Model Selection Test Results

| Test Model	Probability	Explanation
Chow Test	0,0000	Fixed Effect Model
Hausman Test	0.3220	Random Effect Model
L-M Test	0,0131	Random Effect Model

Source: Data that has been processed by the author (2025)

Therefore, according to the criteria for all the best model selection tests using the Chow Test, Hausman Test, and Lagrange Multiplier Test, the selected model in this study is the Random Effect Model. This result is determined because the Hausman test shows a value of 0.3220 > 0.05, and the Lagrange Multiplier test shows a value of 0.0131 < 0.05.

Regression Classical Assumption Test Analysis

In a study using linear regression, a Classical Assumption Test is necessary to ensure that the regression model meets the basic requirements for valid and interpretable analysis results. This study, referring to Budiman (2025) and Gujarati (2020), states that the Random Effects Model (REM) using GLS estimation can handle heteroscedasticity and autocorrelation issues in panel data analysis. Therefore, this study will only conduct Normality and Multicollinearity Tests.

The normality test is conducted to determine whether the data are normally distributed. In this study, the normality test is conducted using skewness and kurtosis tests. Referring to Cahyono (2015), the criteria for the skewness test data with a range of -2 to 2 and the kurtosis test with a range of -7 to 7 indicate that the data can be considered normally distributed. The results of the Normality Test calculation in this study are as follows:
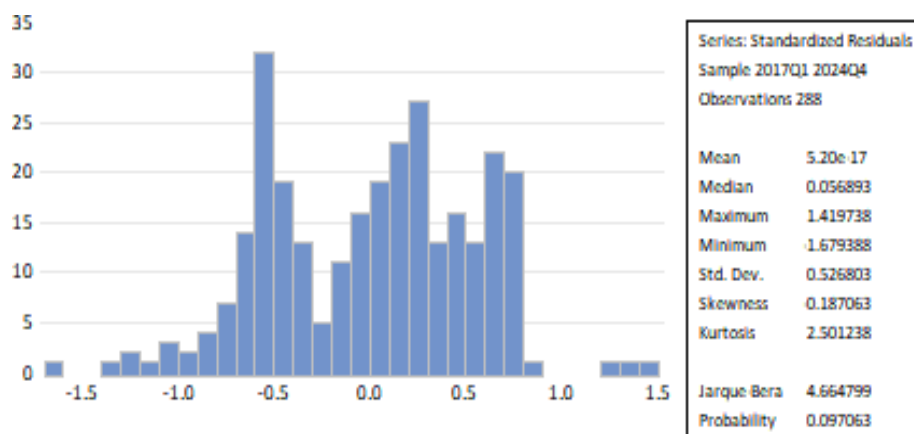
Figure 4. Results of the Normality Test of Indonesian Transportation Company
Source: Data that has been processed by the author (2025)

The analysis results in Figure 4 show a skewness value of 0.187063 and a kurtosis value of 2.501238, resulting in a p-value of 0.097063. Based on the normality test criteria explained previously, this p-value is greater than the significance level used, thus concluding that the data used in this study are normally distributed.

A multicollinearity test was conducted to determine the influence of independent variables. Widarjono (2020) also stated that if the correlation between independent variables is >0.8, it can be concluded that the model experiences multicollinearity. The results of the normality test calculation in this study are as follows:

Table 2. Multicollinearity Test Matrix

	X1	X2	X3
X1	1,000000	0,006044	-0,150584
X2	-0,006044	1,000000	0,342687
X3	-0,150584	0,342687	1,000000

Source: Data that has been processed by the author (2025)

Based on the results obtained in Table 2, it can be seen that none of the correlations between the independent variables showed a value > 0.8. This means that in the research model used, there was no multicollinearity between the independent variables used.

Panel Data Regression Analysis

Based on the analysis results, the Random Effects Model used in this study will be used as a panel data regression model. Therefore, the following are the estimation results obtained for Indonesian transportation companies:

Table 3. Panel Data Regression Test Results of Random Effect Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.490497	0.116541	4.208797	0.0000
TATO	-0.000290	0.180253	-0.001609	0.9987
CR	0.196289	0.066783	2.939199	0.0036
DER	0.038513	0.009657	3.987971	0.0001

Source: Data that has been processed by the author (2025)

$$G\_Score_{it} = 0.490497_{it} - 0.000290(TATO)_{it} + 0.196289(CR)_{it} + 0.038513(DER)_{it} + e_{it}$$

Based on the results of the panel data regression equation, the coefficient interpretation can be explained as follows: A constant value of 0.490497 indicates that if all independent variables, namely Total Asset Turnover (TATO), Current Ratio (CR), and Debt to Equity Ratio (DER), are zero, the G-Score (Y) is estimated to be 0.490497. This constant represents the starting point of the G-Score when there is no influence from these three financial ratios.

The regression coefficient for TATO is negative at -0.000290 or -0.029%. This means that every 1% increase in TATO will decrease the G-Score by 0.029%, assuming the other independent variables remain constant. This indicates that increasing asset utilization efficiency is negatively correlated with the financial health score in this model.

The regression coefficient for CR is positive at 0.196289 or 19.63%. This means that every 1% increase in CR will increase the G-Score by 19.63%, assuming other independent variables remain constant. This finding indicates that better liquidity significantly increases the probability of a company being healthy.

The regression coefficient for DER is positive at 0.038513, or 3.85%. This means that every 1% increase in DER will increase the G-Score by 3.85%, assuming other independent variables remain constant. This indicates that although a high DER typically reflects risk, in the context of this model, it has a positive effect on the G-Score, possibly related to the company's funding strategy.

Table 3 shows that Total Asset Turnover has a calculated t-value of -0.001609, Current Ratio has a calculated t-value of 2.939199, and Debt to Equity Ratio has a calculated t-value of 3.987971. These values will be compared with the t-table value

using alpha ($\alpha = 0.05$). The t-table value ($\alpha/2$; n-k-1) is 1.968352. Therefore, it can be seen that for the Total Asset Turnover variable, the t-count is smaller than the t-table value, with -0.001609 <1.968352. Furthermore, the probability value obtained is 0.9987 > 0.05, so it is concluded that H0 is accepted and H1 is rejected. These results indicate that the Total Asset Turnover variable does not significantly influence bankruptcy risk using the Grover model.

Furthermore, the t-count value for the Current Ratio variable is greater than the t-table value, with 2.939199 > 1.968352. The probability value obtained is 0.0036 <0.05. Therefore, H0 is rejected, and H1 is accepted. These results indicate that the Current Ratio variable has a significant negative effect on bankruptcy risk using the Grover model.

The table also shows that the calculated t value for the Debt to Equity Ratio variable is greater than the t table value, which is 3.987971 > 1.968352. The probability value obtained is 0.0001 < 0.05, so H0 is rejected, and H1 is accepted. These results indicate that the Debt to Equity Ratio variable has a significant positive effect on bankruptcy risk using the Grover model.

To fully test the independent variables, Total Asset Turnover, Current Ratio, and Debt to Equity Ratio on the dependent variable, the G-Score Model, an F-statistical test will be conducted. This test aims to determine the extent to which the independent variables collectively explain variations in the dependent variable. Based on the estimated calculation results, the calculated F value is 9.242483, with a probability value as a significance level of 0.000007. Therefore, the F-table value in this study is also known to be 2.636391. Based on these values, the calculated F value is 9.242483 > 2.636391 with a significance value of 0.000007 < 0.05. Therefore, it can be concluded that the variables Total Asset Turnover, Current Assets, and Debt to Equity jointly have a positive effect on the G-Score.

The coefficient of determination test aims to measure the model's ability to explain variation in the dependent variable. In this study, the R^2 (Adjusted R-Square) test was used to determine the degree of independence of Total Asset Turnover, Current Assets, and Debt to Equity on the dependent variable, the G-Score. Based on the estimated Adjusted R-Square calculation of 0.079324, it indicates that approximately 7.93% of the total G-Score can be explained by the variables Total Asset Turnover, Current Ratio, and Debt to Equity Ratio. However, the influence of the independent variable Debt to Equity Ratio is relatively more dominant at 35.16% compared to other variables, namely Total Asset Turnover at -0.01% and Current Ratio at 27.22%.

Potential Bankruptcy of Transportation Companies During the COVID-19 Pandemic
The COVID-19 pandemic, which peaked in 2020, had a significant impact on Indonesia's transportation sector. Research shows that the lowest average G-Score was recorded at -0.3666 in 2020, indicating that most transportation companies were under severe financial stress. A negative G-Score indicates a high risk of bankruptcy, especially for companies unable to undertake financial restructuring or adapt to drastic changes in market demand. This situation was exacerbated by mobility restrictions, which led to a drastic decline in revenue and increased operating expenses (Elviani et al., 2020; Girsang, 2023).

The company with the lowest G-Score, SAFE, with a score of -3.6028, is in the very high bankruptcy risk category. This extremely negative value reflects accumulated operational losses, a high debt burden, and low liquidity. If financial management improvements are not implemented, the company is at risk of liquidation or bankruptcy (Fitriyani, 2023). In contrast, the company with the ticker code TAXI recorded the highest G-Score of 8.7282 in 2021, indicating success in post-pandemic recovery through management efficiency and cost control. Overall, the G-Score fluctuation from 2020 to

2021 reflects the dynamics of the transportation sector's recovery. 2021 saw the highest average G-Score of 0.7414, indicating improved financial conditions and a reduced risk of bankruptcy. However, the initial period of the pandemic remained a critical phase, placing many companies in distress. Previous research also confirmed that the pandemic led to a decline in profitability and liquidity ratios, thereby increasing the risk of bankruptcy in the transportation sector (Ramadhani et al., 2023; Wulandari & Fauzi, 2022).

The Grover model used in this study proved highly accurate in predicting bankruptcy during the pandemic, with results indicating that most companies were in distress in 2020 (Girsang, 2023). This is in line with the finding that the COVID-19 pandemic is the most dominant external factor influencing the financial health of transportation companies in Indonesia.

The Effect of Total Asset Turnover on Bankruptcy Risk

Based on the results of a study of transportation companies listed on the Indonesia Stock Exchange for the 2017–2024 period, the calculated t-value for the Total Asset Turnover variable was -0.001609, which is smaller than the t-table value of 1.968352. This finding indicates that Total Asset Turnover does not significantly influence bankruptcy risk based on Grover's model. Statistically, this indicates that a company's efficiency in managing total assets to generate revenue is not directly correlated with an increase or decrease in the potential for bankruptcy for transportation companies during the observation period.

Theoretically, Total Asset Turnover is an activity ratio that illustrates a company's level of effectiveness in utilizing its total assets to generate revenue. This ratio is generally used to measure a company's operational efficiency, with the assumption that the higher the ratio, the more efficient the company is in utilizing its assets. However, in the context of bankruptcy risk, operational efficiency does not always align with a company's ability to maintain financial health. Other factors, such as funding structure, liquidity, profitability, and debt management, play a more significant role in determining a company's overall financial condition.

These results align with previous research by Wijaya & Melly (2024) and Ungkari & Nurlaela (2023), which stated that Total Asset Turnover did not significantly influence bankruptcy risk in companies in the transportation sub-sector. The study concluded that asset utilization efficiency is not the primary indicator in assessing bankruptcy risk. Other variables, such as capital structure, leverage level, and cash flow conditions, have a more dominant influence on bankruptcy potential. Therefore, in predictive models like Grover's that consider various financial aspects, Total Asset Turnover is less able to make a significant contribution as a determinant of bankruptcy risk. This finding reinforces the view that operational efficiency factors cannot be separated from other financial indicators in analyzing the risk of business failure comprehensively.

The Effect of Current Ratio on Bankruptcy Risk

The calculated t-value for the Current Ratio variable is 2.939199, higher than the t-table value of 1.968352. This finding indicates that the Current Ratio has a significant negative effect on bankruptcy risk based on Grover's model. In other words, the higher the Current Ratio, the lower the company's bankruptcy risk. Conversely, the lower the ratio, the greater the potential for bankruptcy. This confirms that short-term liquidity is a critical factor in maintaining operational continuity, particularly in the capital-intensive transportation sector, which requires adequate financial capacity to meet short-term obligations.

Theoretically, the Current Ratio is a liquidity ratio that measures a company's ability to meet short-term obligations with its current assets. This ratio is an important indicator

for assessing short-term financial stability. Ideally, a Current Ratio value above 1 indicates that current assets are able to cover current liabilities. However, a ratio that is too high can indicate that a company is not utilizing its current assets efficiently. In the context of bankruptcy risk, a Current Ratio that is too low indicates liquidity problems that could potentially lead to default on short-term debt payments and trigger a financial crisis. Transportation companies generally have significant short-term liabilities, such as fleet maintenance costs, employee salaries, fuel, and other operational costs. Therefore, maintaining liquidity through a healthy Current Ratio significantly impacts business continuity. The results of this study demonstrate that the Current Ratio is a significant indicator in predicting bankruptcy risk using the Grover model.

This finding aligns with research by Winaya et al. (2020), which states that the Current Ratio has a significant influence on bankruptcy in transportation sub-sector companies. This research emphasizes the crucial role of short-term liquidity in maintaining operational sustainability. These studies also conclude that companies that maintain an ideal Current Ratio tend to have greater financial resilience, thereby reducing the risk of bankruptcy.

The Effect of Debt-to-Equity Ratio on Bankruptcy Risk
The results of the study indicate that the calculated t-value for the Debt to Equity Ratio variable is 3.987971, greater than the t-table value of 1.968352. This finding indicates that the Debt to Equity Ratio has a positive and significant effect on bankruptcy risk based on Grover's model. Therefore, the higher the Debt to Equity Ratio, the higher the resulting G-Score, indicating a tendency for bankruptcy risk to decrease. This result indicates that, within the context of the study sample, an increase in this ratio is actually correlated with improved financial condition, although theoretically this may seem contradictory.

Theoretically, the Debt to Equity Ratio is a leverage ratio that measures the extent to which a company finances its activities with debt compared to equity. Generally, the higher this ratio, the greater the risk of bankruptcy. However, the positive results in this study can be explained by the presence of extreme values in the data, such as companies with the stock codes SAFE and CMPP, which have very low or even negative Debt to Equity Ratios because equity is below zero. These extreme values lower the G-Score and make the relationship between this ratio and the G-Score appear positive. This means that companies with very low or negative ratios do not necessarily reflect healthy financial conditions. Conversely, companies with high but stable ratios actually demonstrate better financial management.

The condition also aligns with the characteristics of the transportation sector, which tends to rely on external financing. A capital structure with a high proportion of debt does not necessarily pose a bankruptcy threat, as long as the company is able to manage its debt efficiently and maintain stable cash flow. This finding is relevant to research by Setiawan & Suriawinata (2020), which states that the Debt to Equity Ratio does not always negatively affect bankruptcy risk. Therefore, bankruptcy prediction models like Grover's need to consider sector characteristics and data composition comprehensively to interpret this ratio more accurately.

CONCLUSION
The results of this study confirm that the COVID-19 pandemic has had a significant impact on the financial stability of transportation companies in Indonesia. This impact is reflected in the sharp decline in G-Score values in 2020, indicating an increased potential for bankruptcy in this sector. This decline was primarily due to restrictions on public mobility and a drastic decline in operating income, resulting in companies facing high liquidity pressures. Panel data regression analysis using the Grover model shows that

Total Asset Turnover has no significant effect on bankruptcy risk, implying that efficient asset utilization is insufficient to mitigate risk during a crisis. Conversely, the Current Ratio has been shown to have a significant negative effect on G-Score, confirming that liquidity is a crucial factor in maintaining business continuity. These findings reinforce the view that companies with adequate cash reserves are better able to withstand economic shocks. Conversely, the Debt to Equity Ratio shows a significant positive effect on G-Score. In the context of this study, this indicates that a debt-based capital structure does not necessarily increase bankruptcy risk, as long as debt management is efficient and directed toward supporting productive operations. Thus, leverage can be a strategic instrument when used prudently and accompanied by sound risk management. Overall, this study's findings emphasize that liquidity and leverage management are two key pillars in mitigating bankruptcy risk, particularly amid post-pandemic economic uncertainty. Furthermore, the study highlights the urgency of implementing an early detection system through accurate prediction models, such as the G-Score, to maintain the financial stability of transportation companies. This effort is crucial not only for anticipating potential bankruptcy but also for supporting business sustainability in the dynamic era of economic recovery.

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