

Analysis of Determinants of Stock Returns in Transportation Sub-Sector Companies on the IDX

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Abstract: This study aims to determine whether financial risk and business risk can affect stock returns in transportation companies listed on the Indonesia Stock Exchange. This study is an associative study with a quantitative approach. The population in this study is all transportation companies listed on the IDX during the period 2019-2023. The sampling technique used the purposive sampling method with the number of samples obtained being 10 companies. This study uses secondary data and data analysis techniques using multiple linear regression analysis with SmartPLS program, and hypothesis testing using partial t-tests. The results of this research show that based on partial tests, financial risk and business risk do not have a significant effect on stock returns. The coefficient of determination value obtained was 3.2%, meaning that there are other variables that contribute to stock returns which were not examined in this research.

Keywords: Financial Risk, Business Risk, Stock Return, and
Transportation Companies

A. Introduction

To invest in stocks, investors must be aware of every desired stock development in the capital market. Before making an investment, investors need to know and choose which stocks can provide the most optimal returns for the funds they invest. In investing, there must be risks that must be faced by investors. Understanding the concept of investment risk will greatly help investors in analyzing the investments they will make. So that investors will not be trapped by the desire for high *returns* without looking at the reality of the existing risks.

Transportation companies have an important role in driving the wheels of a country's economy. In Indonesia, this sector not only provides transportation services, but also supports logistics and efficient distribution of goods. Shares of transportation companies on the IDX offer investment opportunities that have promising growth prospects. According to data from the Central Statistics Agency (BPS) in 2023, the transportation and warehousing sector contributes 15.93 percent to Indonesia's economic growth (www.bps.go.id). This shows how big the role of this sector is in the economy in Indonesia. From this, the transportation sector has enormous potential for investors who want to invest.

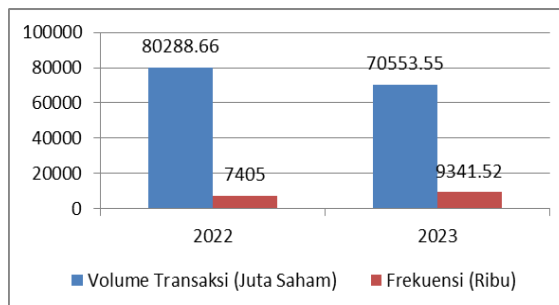


Figure 1. Transportation and Logistics Sector Stock Trading Recapitulation.
Source: PT. EIB, 2024

The table above shows stock trading data for the transportation and logistics sector on the IDX during 2022-2023 which shows that when viewed from the volume of transactions that occurred for two years, it decreased, but the frequency of transactions increased by around two thousand transactions that occurred. This shows that investor interest in stocks in this sector has increased.

There are several studies that explain the influence of financial risk and business risk on stock returns, including, (Safara & Nekky, 2024) found that business risk has an insignificant effect on stock returns, (Idris, 2024) found that financial risk and business risk have no effect on stock returns. (Prasetyani, 2016) concluded that financial risk and business risk simultaneously have an effect but not significantly on stock returns. (Tumanggor, Salim, & Djumahir, 2019) explained that business risk has a significant positive influence on stock returns. (Palisungan, 2021) found that financial risk has a negative and insignificant effect on stock returns, while business risk has a positive and significant effect on stock returns. (Nazariah, 2020) explained that financial risk and business risk have a significant positive effect on stock returns.

Although several previous studies have examined the effect of financial and business risks on stock returns, findings across sectors have shown inconsistent and contradictory results, especially in the context of emerging markets such as Indonesia. However, limited research has specifically analyzed these risk factors in the transportation sub-sector, which is vital for national economic growth. This study aims to fill that gap by focusing on transportation companies listed on the IDX, using financial risk (proxied by Debt to Equity Ratio) and business risk (measured using the standard deviation of Return on Equity) as determinants of stock returns. By narrowing the industry focus and utilizing updated data from 2022–2023, this research contributes uniquely to the literature by offering

contextual insights and implications relevant for investors and policy-makers in sector-specific investment decision-making.

B. Method

In this research, the analysis method used is associative with quantitative analysis. The population in this study is a transportation company listed on the Indonesia Stock Exchange (IDX) during the 2019-2023 periodic. The method of sampling in this research is to use the sampling method. The criteria for sampling are; (1) Transportation companies listed on the IDX Periodic 2019-2023 (2) Transportation companies that publish financial statements for 5 consecutive years in 2019-2023.

Table 1. Research sample

No.	Company Name	Code
1.	Adi Sarana Armada Tbk.	ASSA
2.	Blue Bird Tbk.	BIRD
3.	Batavia Prosperindo Trans Tbk.	BPTR
4.	AirAsia Indonesia Tbk.	CMPP
5.	Garuda Indonesia (Persero) Tbk.	GIAA
6.	Jaya Trishindo Tbk.	HELI
7.	Eka Sari Lorena Transport Tbk.	LRNA
8.	Steady Safe Tbk.	SAFE
9.	Express Transindo Utama Tbk.	TAXI
10.	WEHA Transport Indonesia Tbk.	WEHA

Source: Data processed by the author, 2024

Research variables are attributes or elements in a study that possess varying values to be observed, analyzed, and concluded (Elveira & Yeisita Astarina, 2021). This research identifies two independent variables: financial risk and business risk, and one dependent variable: stock return. Financial risk is proxied by the Debt to Equity

Ratio (DER), and business risk is proxied by the standard deviation of Return on Equity (ROE) (Brigham & Houston, 2006). Stock return is calculated by finding the difference between the stock price at time t and the stock price at $t-1$. For a clearer understanding of the operational definitions: the financial risk variable (DER) is measured by dividing total liabilities by total equity, as reported in the companies' annual financial statements ($DER = \text{Total Liabilities} / \text{Equity}$). The business risk variable is measured using the standard deviation of Return on Equity (ROE), where ROE is calculated by dividing net income by shareholders' equity ($ROE = \text{Net Income} / \text{Equity}$). The standard deviation is calculated over a five-year period (2019–2023) to reflect the volatility of ROE, representing the company's business risk. This approach aims to capture both the level and stability of risk indicators relevant to investors in the transportation sub-sector.

This research uses multiple linear regression analysis with the help of the SmartPLS4 statistical program. The analysis of the Multiple Linear Regression was carried out to see the relationship between dependent variable and independent variable

$$Y = a + b_1X_1 + b_2X_2 + e$$

And= Return Stock

a = Constance

b1 = Regression coefficient variable X1

b2 = Regression coefficient variable X2

X1 = Financial risk

X2 = Business risk

e = Standard error

The hypothesis test in the research was carried out with a t test, which is a test to determine the number of variables from each variable of independent and to the variable of dependent. If the value of t is calculated $> t$ table or the $<$ sign value is 0.05, then the

hypothesis is accepted to mean that the variable independent is significant in a partial way to the variable of the dependent, and conversely.

C. Results and Discussion

Data collection with the help of the SmartPLS4 statistical program shows the results of the examination against the research data as follows. Descriptive statistical testing was carried out to describe the research data that had been produced. The results of data collection were used for a descriptive statistical test.

Table 2. Descriptive Statistical Test Results

Description	Mean	Median	Observed Min	Observed Max
Financial Risk	-0,678	0,315	-22,700	7,830
Business Risk	-0,370	0,020	-3,080	3,090
Return Saham	0,226	0,000	-0,770	5,150

Source: Data processing results, 2024

Table 2. presents the descriptive statistics of each research variable, including the mean, median, minimum, and maximum values observed. The financial risk variable shows a mean of -0.678 and a median of 0.315, with an observed minimum of -22.700 and a maximum of 7.830. These figures indicate the presence of extreme outliers, particularly on the lower end. A highly negative DER (Debt to Equity Ratio) is unusual and likely reflects companies with negative equity values—possibly due to accumulated deficits, financial restructuring, or ongoing losses—which distort the DER formula. Meanwhile, the extremely high DER value suggests a company with substantial reliance on debt financing, a condition

commonly found in capital-intensive industries or firms facing financial distress.

For the business risk variable, represented by the standard deviation of Return on Equity (ROE), the data show a mean of -0.370, a median of 0.020, a minimum of -3.080, and a maximum of 3.090. While negative means may result from the normalization or scaling process, the wide spread of values suggests substantial variability in earnings performance. The higher-end values (above 3.0) indicate firms with significant volatility in their equity returns—likely caused by unstable income, operational disruptions, or market shocks, especially during the pandemic period from 2020 to 2022.

The stock return variable has a mean of 0.226, a median of 0.000, a minimum of -0.770, and a maximum of 5.150. The zero median implies that half of the companies experienced non-positive returns, while the highest value suggests that a small number of firms had exceptionally high capital gains possibly due to short-term market sentiment or speculative activity, rather than consistent financial performance.

The implications of these extreme values are significant. Firstly, they indicate a high degree of heterogeneity among companies in the transportation sub-sector listed on the IDX. Secondly, such outliers may affect the assumptions of regression analysis—particularly normality and homoscedasticity—which could influence the accuracy of statistical inference. Hence, interpretation of the regression results must take into account these data anomalies, as they reflect not only statistical irregularities but also meaningful differences in firm characteristics and risk profiles. For investors, these findings reinforce the need to assess company-specific conditions when evaluating financial and business risks in this sector.

The results of the normality test can be seen in the skewness and kurtosis values on this table.

Table 3. Normality Test Results

Description	Standard Deviation	Excess Kurtosis	Skewness
Financial Risk	4,263	13,393	-2,836
Business Risk	1,036	3,008	-0,555
Return Saham	1,041	13,219	3,453

Source: Data processing results, 2024

Based on table 3, see the value of kurtosis and skewness in each variable of the value of kurtosis has a value of 2 and skewness each has a value of -2 which indicates an abnormal distribution. These results can be continued for multiple regeneration models with smartPLS as stated (Hair, Matthews, Matthews, & Sarstedt, 2017) when performing structural similarity modeling or using data processing with SmartPLS, not all data must be distributed in a normal way. Furthermore, Rigdon, Becker, and Sarstedt (2019) assert that PLS-SEM is not only tolerant to non-normality but is often the preferred approach when sample size is limited or data characteristics do not meet the assumptions of covariance-based SEM.

Table 4. Heteroskedasticity Test Results

	Test-Statistic	df	P Value
Breiusch-Pagan Teist	8.159	2	0.170

Source: Data processing results, 2024

Based on the data, the value of the Breiusch-Pagan Theist is calculated to be 0.170 instead of 0.05 until it can be concluded that this research does not result in a heteroscedasticity so that it can be used as a good model. The results of the multicollinearity test can be seen from the VIF value of the following.

Table 5. Multicollinearity Test Results

Description	VIVID
Financial Risk	1,042
Business Risk	1,042

Source: Data processing results, 2024

Based on the results of VIF on the two variables, the value of each is 1.042 (<10.00), meaning that it does not become multicollinearity. The results of the re-enactment exam with the help of the SmartPLS program are shown in the picture and table below.

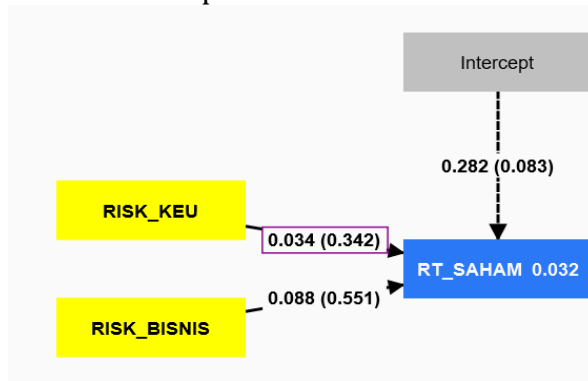


Figure 2. Multiple Linear Regression Test Results

Source: Data processing results, 2024

Based on the Multiple Linear Regression Test described in figure 2 above, this following is a table of the results of the Multiple Linear Regression Test

Table 6. Results of Multiple Linear Regression Test

	Unstandardized Coefficients
Fashion (Constant)	B 0,282

Financial Risk	0,034
Business Risk	0,088

Source: Data processing results, 2024

Based on the results of the re-enactment test, the following are as follows: $\text{Return Stock} = 0.282 + 0.034 \text{ Risk_Keiu} + 0.088 \text{ Risk_Bussiness} + e$

The results of the regression analysis show that the coefficient for the financial risk variable is positive at 0.034 or 3.4%, while the coefficient for the business risk variable is also positive at 0.088 or 8.8%. This shows that there is a positive relationship between both independent variables—financial risk and business risk—on the dependent variable, stock return. This means that when financial or business risk increases, stock returns tend to increase as well.

From a theoretical standpoint, this finding supports the risk-return trade-off principle in modern financial theory, which asserts that investors demand higher returns as compensation for bearing higher risk (Zhou & Li, 2021). The positive coefficient of financial risk (measured using the Debt to Equity Ratio) may indicate that investors interpret higher leverage as a potential signal of expansion and growth, particularly in capital-intensive industries like transportation. Meanwhile, the positive coefficient of business risk (measured using the standard deviation of ROE) implies that greater volatility in company performance may be perceived as opportunity-bearing by risk-tolerant investors, especially in emerging markets (Ryu & Kim, 2020). Although the coefficients are not statistically significant, their direction aligns with fundamental financial theories regarding investor behavior under risk.

Partial and simultaneous testing is carried out to answer the research hypothesis that has been formulated.

Table 7. Partial Test Results

Fashion	Partial Test	
	t	Sig.
(Constant)	1,771	0.083
Financial Risk	0,959	0,342
Business Risk	0,601	0.551

Source: Data processing results, 2024

Partial tests in this study showed that the financial risk variable had a p-value or significance value of 0.342 (>0.05). This shows that financial risk does not have a significant impact on the stock return. It is also a variable of business risk that has a p-value of 0.551 instead of 0.05. This shows that business risks are not significantly affected by the stock return. These insignificant results may be theoretically justified by the nature of the transportation industry, which is highly capital-intensive. In such industries, a high level of debt (financial risk) is often expected and may not serve as a critical signal to investors regarding firm performance, thereby reducing its predictive power on returns (Zhou & Li, 2021). Furthermore, business risk, proxied by the standard deviation of ROE, may be perceived by investors as a form of diversifiable firm-specific risk, which under the assumptions of modern asset pricing models, does not significantly influence expected returns. In addition, during the 2019–2023 period, investor decision-making may have been more strongly influenced by macroeconomic uncertainty, post-pandemic recovery expectations, or behavioral biases rather than by fundamental firm-level risks (Ryu & Kim, 2020; Chavali & Rosario, 2021). These conditions may explain why neither financial nor business risk appeared to have a statistically significant effect on stock return in this context.

The data analysis of the test of the cohesion test to see to what extent the variables of the individual can influence the variable can be seen in the table below.

Table 8. Results of the Determination Equation Test

Fashion	R Square	Adjusted R Square
1	0,032	0,009

Source: Data processing results, 2024

Based on the table of the results of the determination cohesion test above, it is known that the value of R-Square is 0.032 or 3.2%. This means that while the total number of variables in financial risk and business risk only contributes 3.2% to this research model, while the remaining 96.8% is influenced by other variables that are not researched or included in this research model. The low explanatory power of the model and the non-significant results of the independent variables may be theoretically explained by the nature of capital markets, especially in emerging economies like Indonesia, where investor behavior is often driven more by macroeconomic conditions, speculative motives, or market sentiment than by firm-specific financial indicators (Ryu & Kim, 2020). Additionally, the Efficient Market Hypothesis suggests that all available public information, including risk ratios, is already reflected in stock prices, which can further weaken the statistical influence of isolated variables such as DER or ROE volatility (Zhou & Li, 2021). Therefore, while financial and business risks are theoretically relevant, their impact may be overshadowed by broader, unmeasured market dynamics in the observed period.

Discussion

The results of the analysis in this study show that the financial risk variables proxied by the DER do not have a significant impact on the *stock return* of transportation companies listed on the IDX. This indicates that the reduction of financial risks will not affect the return of the company's shares. The financial risk that exists in a company is very variable and has a lot of risks if it happens to a company. One of the financial risks that companies face along with it is liquidity risk. Liquidity risk is the most common and most pressing

problem for any company. The company runs out of cash due to insufficient income, poor income, and cannot provide the bank with a problem from the internal or external of the company. No less important is the risk of credit or cash belonging to a company, this can be uninvested in return to get the benefits. Theoretically, this phenomenon can be explained by the tendency of investors in emerging markets such as Indonesia to place greater emphasis on macroeconomic indicators, fiscal and monetary policy, as well as external factors such as fluctuations in global energy prices or national logistics subsidy schemes, rather than internal financial ratios when evaluating stocks in the transportation sector.

Signaling theory shows that a company with a high value will send signals in the form of a lot of debt. The use of debt shows that the company is not resilient to the risk of bankruptcy, so that the market valuation of the company will increase (Megginson, 1997). One way to show good performance is to show good performance, so according to this theory, if the business value is good, then the business can be said to be good (Apriani, Lupikawaty, & Purnamasari, 2024). According to Ang Dalam (Subalno, 2010) he argues that the high level of debt indicates that the interest burden of the company will be as high as the profit. The existence of this income is so that the investor does not include the DER in his investment consideration, so that the DER does not have to face the stock return.

An examination of the variables of business risk shows that business risk does not have a significant impact on the stock return. Business risk is one of the non-systemic risks experienced by many businesses because there is no certainty in the valuation of returns on invested capital. Each company will face business risks, for example, if the company does not have adequate funds to carry out its business activities. Business risks cause the company to be unable to meet the target or unable to achieve the company's goals.

Generally, companies are not able to provide adequate returns for investors. Uncertainty can also lead to business failure and even bankruptcy. Business risk has a more significant impact when the company has a high risk. This makes it difficult for companies to get cheap funds, because investors see that companies have a high risk of default. The combination of high business risk and leverage makes it difficult for businesses to meet their financial obligations at any time. When income falls, it is unable to pay the return on its debt, and it can lead to bankruptcy. Despite these theoretical implications, investors may place greater emphasis on broader indicators such as earnings momentum, dividend stability, or sector-wide performance trends, which are often seen as more predictive of return in the Indonesian equity market context) (Chavali & Rosario, 2021; Li & Wang, 2022).

In transportation companies that are listed on the IDX through this research, the results show that business risks are not related to the return of the company's shares. This shows that it is possible that the ROE is not proportional to the value of the DER, so that the profit earned will cover the interest burden of the loan incurred for the debt. The ROE deification is believed as real evidence to the investor to see whether the company's performance is balanced or not.

The results of this research are supported by the research conducted by (Suharli, 2005), (Prasetyani, 2016), and Seirta (Wiyati, Maryati, & Thamrin , 2022) who suggest that business risks do not affect stock returns. Furthermore, research (Nababan, Mangantar , & Maramis, 2019) is also consistent with the results of this research, business risk can be interpreted as a potential event that results in a decrease in the profitability of the company.

In this research, business risk does not impede the stock return, this means that the company's management is not able to use the assets properly to increase the stock price so that the stock return does not increase. This also shows that even though transportation

companies listed on the IDX have good business prospects, they are not a motivating factor to attract investors for investment. This lack of interest is what causes a decline in demand for shares which will later have an impact on the stock price that does not affect the company's stock return.

D. Conclusions

Based on the results of the research, it can be concluded that at least partially financial risk and business risk are not affected by the stock return. This shows that the investor has other considerations, apart from the risks that occur to the company, for example, the consideration of financial and business considerations carried out by the management of the company. The results of the determination test show that the risk of financial and business risk in the face of stock return is only 0.032 or 3.2%, meaning that 96.8% of the stock return is affected by other factors other than the variables in this research.

This research discusses stock return based on the influence of financial and business risk variables. The limited explanatory power of only 3.2% reflects a limitation of this study, which included only two variables related to financial and business risk. For future research, it is recommended to consider additional variables such as market sentiment, macroeconomic indicators (e.g., inflation, interest rates), ESG performance, corporate governance, or earnings per share (EPS), which may provide a more comprehensive understanding of the determinants of stock return in the transportation sector.

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