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Analysis of Stock Prices With Solvency as an Intervening Variable in Pharmaceutical Companies on the Indonesian Stock Exchange

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A B S T R A C T

The current global industrial sector development demands standardized regulations in reporting. Various industrial sectors consider these standards crucial for competitiveness, ensuring uniform information for readers and investors alike. One form of investment in the capital market is investment in stocks. According to the investment theory of low risk, low reward, or high risk, big return, investing in stocks truly entails considerable risks. For pharmaceutical businesses registered on the Indonesian Stock Exchange, to calculate stock price analysis with solvency as an intervening variable. The documentation method is the data collecting strategy used to gather data. The study's findings show that the stock prices of pharmaceutical companies are positively impacted by profitability, solvency, and activity ratios.

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INTRODUCTION

In the current era of globalization, with economic growth and competition in the business world entering the free market, it has created a high level of competition among companies. The increasingly competitive business environment poses a challenge for every company to win this competition, the way to go is to enhance the capabilities of its resources and continuously improve every aspect of the organization to increase the company's value. In this regard, the pharmaceutical sector has experienced it after the Covid-19 pandemic caused the average stock prices of pharmaceutical companies to decline. The pandemic, which has been ongoing for 2 years, has changed people's lifestyles to be more concerned about health. This is directly proportional to the level of consumption, not only of medicines but also vitamins, supplements, and hygiene products such as masks, hand sanitizers, and disinfectants. With the change in people's lifestyles that prioritize health, does this have an impact on the stock prices of pharmaceutical companies.

At the financial statements, it shows that the activity ratio of sub-pharmaceutical companies, seen from the average value per year, has experienced fluctuations. The capacity of a business to turn a profit with the resources it has, including capital, assets, and sales, is known as profitability (Sudana, 2009: 25). Many investors would spend their money to purchase business shares if they believe the firm is successful or has the potential to make a profit in the future, which will raise the stock price. Investors are interested in purchasing the shares since the strong profitability suggests that they will obtain significant returns. Positive indications or information from this might lead to an increase in the price of stocks.

If we look at the financial statements, it shows that the Debt to Equity Ratio of sub-pharmaceutical companies, seen from the average value per year, has experienced fluctuations. In the year 2020, the average total Debt to Equity Ratio was 1.195, then in 2021 it increased to 1.647, and in 2022 it decreased to 1.589. From this data, it can be observed that the average total Debt to Equity Ratio of sub-pharmaceutical companies in the year 2022 experienced a decrease. Solvency is a ratio comparing total debt to equity. Solvency can decrease when a company is unable to meet all its obligations in the short or long term. This is in line with research (Hasibuan, 2018) which states that both high and low levels of debt in a company will affect the company's profitability. If the costs incurred from loans exceed the company's equity, the source of funds from loans will become ineffective because of the high amount of interest charged. Research by Pratiwi et al. (2020) supports this, stating that the findings indicate a positive link between Solvency and the stock price variable, with Solvency not having a substantial impact.

THEORETICAL REVIEW

Signal Theory

As per Space in Safira & Budiharjo (2021), signals are created by the sender, who is the owner of the information, and they aim to offer the recipient with pertinent information that they may use. As for signal theory, Brigham & Houston (2019:500) state that it is a move made by management to provide investors an idea of how management perceives the future of the firm. Financial statement information sent by firms to external parties is motivated, as explained by signal theory. Because it is more knowledgeable about its own business and prospects than other parties (creditors and investors), the firm is motivated to provide information. This information asymmetry between the company and external parties.

Capital Market

The capital market is a venue or mechanism where the demand and supply of long-term financial instruments, typically more than one year, meet. According to Widoatmodjo in Albadri (2021), the capital market can be described as an abstract market, where long-term funds are traded, which are funds that are committed to investments for more than one year, whether in the form of debt or equity issued by governments, public companies, and private companies. The capital market facilitates the trade of long-term financial instruments, including stocks, bonds, and other securities, between investors and institutional or government enterprises. With the presence of the capital market, companies will find it easier to obtain funds, thus boosting economic activities in various sectors. By selling shares in the capital market, it means that the public is given the opportunity to own and enjoy the profits earned by the company.

Stocks

The favorable returns that stocks provide make them one of the most sought-after financial products in the capital market. Stocks are a type of ownership interest that a person or entity (commercial entity) might have in a limited liability company or firm. Investors should take the stock price into account when making decisions since it is a crucial indicator of the issuer's or company's success. If the issuer performs better, the profits generated from business operations will increase. In such conditions, the value of the stock is an appropriate index for the effectiveness of the company. Therefore, it is often said that maximizing the value of the company also means maximizing the wealth of shareholders. According to William Hartanto (2018:22), the concept of stock price is a unit of value or accounting in various financial instruments that refers to the ownership stake in a company or a form of ownership of a company in the capital market.

Ratio Analysis

Analytical methods called financial ratios are used to show how various components of a financial statement relate to one another. Financial ratios, according to Kasmir (2018:104), compare statistics in financial accounts by dividing one value by another. The comparison can be made between components within a single financial statement or among components across financial statements. Moreover, the figures being compared can represent numbers within a single period or across multiple periods. Financial ratio analysis is divided into five parts according to Harmono (2017:106), namely: (1) Liquidity Ratios, (2) Activity Ratios, (3) Solvency Ratios, (4) Profitability Ratios, and (5) Firm Value Ratios.

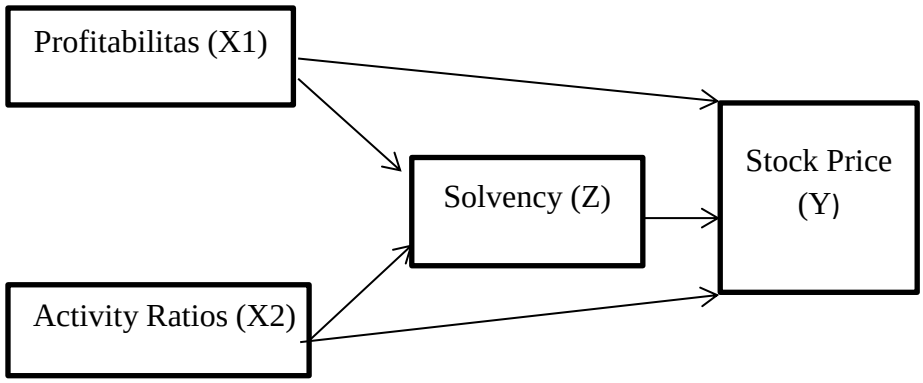

Figure 1. Conceptual Framework

METHODOLOGY

Three variables are used in this study: the independent variables profitability (X1) and activity ratios (X2), the dependent variable stock price (Y1), and the intervening variable solvency (Z1). Secondary data from the Indonesia Stock Exchange (IDX) were used in this investigation. All pharmaceutical businesses that are listed on the Indonesia Stock Exchange comprise the population under study. The research sample for this study consists of pharmaceutical businesses that were listed between 2020 and 2022 on the IDX. Purposive sampling, a type of non-probability sampling, is the approach used in this study to choose the sample.

Path analysis is the analysis technique that is used to look at the links between the variables. This model is used to ascertain the direct and indirect impacts of a group of independent (exogenous) factors on the dependent (endogenous) variable, according to Sani and Maharani as mentioned in Nurulita (2021). Each H value reflects the path and path coefficient connecting variables according to the conceptual framework. From the data provided by the company, it is processed to identify the relationships among variables using SPSS software. The SPSS approach is based on shifting the analysis from estimating model parameter measurements to relevant precision measurements. Therefore, the focus of the analysis shifts from merely estimating and interpreting significant parameter values to the validity and accuracy of predictions.

RESULTS

Based on the data provided from April 24, 2024, to May 1, 2024, the development of ROA from 2020 to 2022 shows fluctuating trends. Furthermore, the financial statements indicate that the Total Asset Turnover of the pharmaceutical subsidiary company, observed from the average annual values, experienced fluctuations. Subsequently, the results of processing the company data using SPSS are as follows :

Analysis and Hypothesis Test

The Outlier Test

Outlier is the first test carried out in testing between variables in this study. The results of the outer model test are as follows:

Tabel.1 The Outlier Test

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	494,4931	2400,6497	1695,8898	528,43304	30
Std. Predicted Value	-2,274	1,334	,000	1,000	30
Standard Error of Predicted Value	52,928	227,828	79,587	36,259	30
Adjusted Predicted Value	515,6760	2406,8081	1692,8336	538,10463	30
Residual	342,79990	520,81732	,00000	226,13513	30
Std. Residual	-1,435	2,181	,000	,947	30
Stud. Residual	-1,480	2,257	,000	,988	30
Deleted Residual	364,29312	557,80920	3,05624	248,92195	30
Stud. Deleted Residual	-1,516	2,468	,018	1,026	30
Mahal. Distance	,458	15,424	2,900	4,710	30
Cook's Distance	,000	,164	,027	,038	30
Centered Leverage Value	,016	,877	,100	,162	30

The Mahalanobis Distance Maximum value is 15.424, according to the outcome of the outlier test study. The fact that this result is less than the 18.466 outlier threshold suggests that the data being examined is free of outliers. Consequently, this data is regarded as being of excellent quality and may be processed using a total of thirty samples.

Classical Assumption Test

Table.2 Classical Assumption Test

		Unstandardized Residual
N		30
Normal Parameters[a,b]	Mean	,0000000
	Std. Deviation	226,13512997
Most Extreme Differences	Absolute	,184
	Positive	,184
	Negative	-,114
Test Statistic		,184
Asymp. Sig. (2-tailed)		,091[c]

Based on Table 2, the output results indicate that the asymptotic significance 2-tailed values for the unstandardized Residual of all processed variables in this study are above 0.05. Therefore, the normality test of the unstandardized Residual data yields a value of 0.091, which is greater than 0.05. Consequently, it can be concluded that the data in this study follows a normal distribution.

Multikolinieritas Test

Table.3 Multikolinieritas Test

Model		Collinearity Statistics	
		Tolerance	VIF
1	ROA (X1)	,585	1,710
	TATO (X2)	,910	1,099
	DER (Z)	,545	1,836

Based on Table 3, the classical assumption test for multiple linear regression analysis indicates that the analysis results of this study show no symptoms of multicollinearity in all independent variables (ROA, TATO, DER), as the VIF values for all independent variables are less than 10.

Heterokedastisitas Test

Table.4 Heterokedastisitas Test

			ROA (X1)	TATO (X2)	DER (Z)	Unstandardized Residual
Spearman's rho	ROA (X1)	Correlation Coefficient	1,000	,084	-,754**	,105
		Sig. (2-tailed)	.	,657	,000	,582
		N	30	30	30	30
	TATO (X2)	Correlation Coefficient	,084	1,000	,083	,075
		Sig. (2-tailed)	,657	.	,663	,693
		N	30	30	30	30
	DER (Z)	Correlation Coefficient	-,754**	,083	1,000	,060
		Sig. (2-tailed)	,000	,663	.	,752
		N	30	30	30	30
	Unstandardized Residual	Correlation Coefficient	,105	,075	,060	1,000
		Sig. (2-tailed)	,582	,693	,752	.
		N	30	30	30	30

Based on the correlation analysis results, there is clearly no significant link between the independent variables (ROA, TATO, DER) and the residuals, according to the findings of the correlation study between the independent variables and the unstandardized residuals. This is indicated by the significance values (Sig) being greater than 0.05, rendering them non-significant. Therefore, it can be concluded that there is no heteroscedasticity present in the analysis of all research variables.

Autokorelasi Test

Table.5 Autokorelasi Test

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,919[a]	,845	,827	238,82532	1,850

The Durbin-Watson value obtained, compared to the Durbin-Watson table with the number of data (N) = 30 and the number of independent variables (K) = 3, and α = 0.05, indicates that the calculated Durbin-Watson (DW) value falls within the region where there is neither positive nor negative autocorrelation.

Regression Analysis

Equation 1 Structural Test

Table.6 Equation 1 Structural Test

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1,957	,360		5,433	,000
	ROA (X1)	9,823	2,290	,614	-4,289	,000
	TATO (X2)	,240	,163	,211	1,471	,153

Based on the test results with the F-test on the first equation, it shows that the significance value (Sig.) = 0.000 < 0.05. This implies that the multiple regression analysis tool used as an analytical instrument in this research model is appropriate or suitable for use as a research model in the first equation, with a significance level of 0.000.

Equation 2 Structural Test

Table.7 Equation 2 Structural Test

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	2739,000	107,682		25,436	,000
	ROA (X1)	3979,681	613,563	,654	6,486	,000
	TATO (X2)	87,208	35,017	,201	2,490	,019
	DER (Z)	-417,203	39,760	-1,097	-10,493	,000

Based on the test results with the F-test on the second equation, it shows that the significance value (Sig.) = 0.000 < 0.05. This implies that the multiple regression analysis tool used in the second equation as an analytical instrument in this research model is appropriate or suitable for use as a research model with a significance level of 0.000.

Path Coefficients Model 1

The significant values of both variables, X1 = 0.000 (< 0.05) and X2 = 0.153 (> 0.05), may be seen by looking at the regression output of the first equation in the coefficients table. This result concludes that Regression Model I, where the variable ROA (X1) significantly influences DER (Z) and TATO (X2) does not affect DER (Z). In the model summary table, R Square has a value of 0.455. Meanwhile, e1 = √(1-0.455) = 0.738 may be used to compute the value of e1. Consequently, the following is the Model Structure I route diagram:

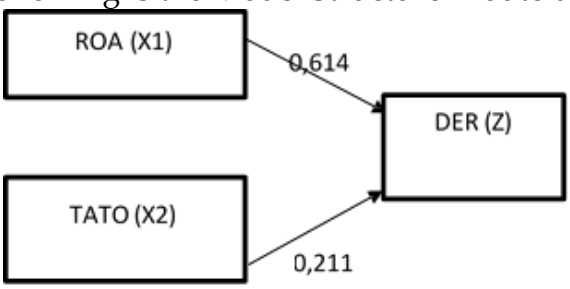

Figure.2 Path Coefficients Model 1

Path Coefficients Model 2

The significant values of all three variables, X1 = 0.000 (< 0.05), X2 = 0.019 (< 0.05), and X3 = 0.000 (< 0.05), can be seen based on the regression output of the second equation in the coefficients table. This finding indicates that Regression Model II, in which Stock Price (Y) is highly influenced by factors X1, X2, and X3, is correct. R Square in the model summary table has a value of 0.845. In the meanwhile, e2 = √(1-0.845) = 0.394 may be used to derive the value of e2. Consequently, the following is the Model Structure II route diagram:

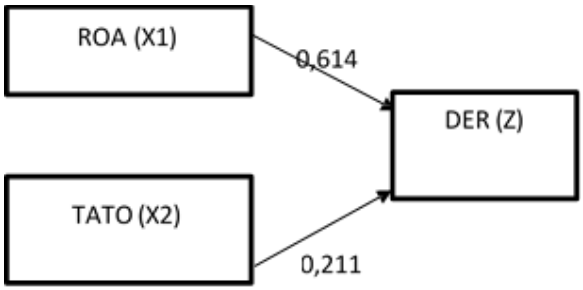

Figure.3 Path Coefficients Model 2

DISCUSSION

The Effect of Profitability on Stock Prices

According to the hypothesis testing results conducted by the researcher, the significance value of the Return on Asset ratio can be significantly accepted regarding stock prices. Thus, the first hypothesis stating that the profitability ratio, proxied by ROA, has a positive influence on stock prices can be accepted. Profitability ratios affect stock prices. The results of this study can demonstrate that the effectiveness and efficiency of asset utilization in generating profits in Table 4.1 fluctuating and tend to decrease, with an average value from 2020 to 2022 of 0.07. The high or low profitability affects stock prices because when ROA decreases, stock prices also decrease. This is consistent with studies by Ady (2021) and Putri (2020), which show that stock prices are positively and significantly impacted by return on assets (ROA). This demonstrates the significant impact Return on Asset (ROA) has on stock prices.

The Effect of Activity Ratios on Stock Prices

Based on the hypothesis testing conducted by the researcher, the significance value of the activity ratio shows a significant positive influence on stock prices. Therefore, the second hypothesis stating that the activity ratio proxied by TATO has a positive effect on prices is accepted. This may be seen as follows: rising stock prices correspond with rising TATO. On the other hand, stock values fall in tandem with a decline in the TATO value. The ratio known as total assets turnover, or TATO, is used to assess how sales and fixed asset ownership compare.

Nur'aidawati (2018) claims that TATO calculates the ratio of sales to a company's total assets. This ratio measures a company's ability to maintain its business stability so that it can survive and grow independently. Additionally, TATO can measure the effectiveness of utilizing bank resources by using total assets to create customer credit value growth and earn profits from the interest rate differential between loans and deposits (Nazariah, 2020). This is consistent with the research by Nazariah (2020) and Nur'aidawati (2018), which show that the activity ratio (TATO) partially has a positive effect on stock prices.

The Effect of Profitability on Stock Prices through Solvency

Based on the hypothesis testing conducted by the researcher, the significance value of solvency indicates that it can mediate the influence of profitability on stock prices. Thus, the third hypothesis stating that solvency can act as an intervening variable is accepted. According to Muhammad Fuad et al. (2019), profitability is a crucial financial aspect that plays a significant role in investment decision-making by investors and in shaping market sentiment towards a company listed on the Indonesia Stock Exchange (IDX). This aligns with the theory that corporate investment financing using debt can influence a company's ability to generate profits from its capital (Sudana, 2011). Based on this theory, solvency can act as a moderating variable because a company's stock price is influenced by its profitability, proxied by Return on Assets, while profitability itself is also influenced by solvency, represented by the Debt Equity Ratio.

The Influence of Activity Ratio on Stock Prices Through Solvency

The findings of the hypothesis test indicate that the activity ratio has an indirect impact on stock prices through solvency. This suggests that solvency influences stock prices and market ratios by acting as a mediator. The fourth theory is thus accepted. Thus, from 2020 to 2022, the link between the Total Assets Turnover (TATO) ratio and stock prices of pharmaceutical businesses listed on the Indonesia Stock Exchange may be mediated by the Debt to Equity Ratio (DER) variable. Irham Fahmi (2014:72) reveals that the larger a company is, the higher the need for funds to support working capital, accompanied by a need for higher turnover to cover the working capital costs. Conceptually, when sales turnover increases and exceeds the working capital costs, it means that the company will generate profits, and vice versa. Capital structure refers to the combination or mixture of long-term financing sources. Capital structure is the blend or comparison between long-term debt and equity used by companies to finance their activities (Lynanda, 2018:138).

CONCLUSIONS AND RECOMMENDATIONS

Profitability influences the stock prices of pharmaceutical businesses listed on the Indonesia Stock Exchange, according to the findings of the research and the discussion in the preceding chapter. This clarifies why variations in profitability have an impact on these firms' stock values. Stock prices of pharmaceutical businesses listed on the Indonesia Stock Exchange are influenced by the activity ratio. This elucidates how a company's stock price may be affected by the high or low value of its activity ratio. When it comes to pharmaceutical businesses listed on the Indonesia Stock Exchange, solvency can mitigate the impact of profitability on stock prices. This suggests that even in situations where a company's profitability is great, a high solvency number can have an impact on stock prices. The impact of activity ratio on the stock prices of pharmaceutical businesses listed on the Indonesia Stock Exchange can also be mitigated by solvency. This implies that even in cases when a company's activity ratio is high, stock prices can still be impacted by a high solvency number.

As for recommendations related to this research, company management should consider profitability as a basis for decision-making, especially in enhancing the company's profitability, so that its stocks can continue to thrive and attract investors. Based on the findings of this research, investors planning to invest in stocks are advised to pay closer attention to fundamental conditions, especially variables such as Return on Asset, Current Ratio, and Earnings per Share. Because this research has proven that these variables have an influence on stock prices.

FURTHER STUDY

This research utilized pharmaceutical companies listed on the Indonesia Stock Exchange as the observational units. The findings of this study do not preclude the possibility that other research utilizing the same or different variables, employing similar or different methodologies, and investigating the same or different variables will likely yield different conclusions. Therefore, it provides an opportunity for subsequent researchers to conduct studies with the same or different subjects.

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