


The Influence of Profitability, Leverage, Firm Size, and Liquidity on Stock Prices: Evidence from the Pharmaceuticals and Healthcare Research Subsector Listed on the Indonesia Stock Exchange

Ahmad Rai Faturrahman¹, Astrid Dita Meirina Hakim²

Faculty of Economics and Business, Budi Luhur University. Jl. Ciledug Raya, Petukangan Utara, Jakarta Selatan 12260

Article Info	ABSTRACT
<p>Keywords: Profitability, Leverage, Firm Size, Liquidity, Stock Price.</p>	<p>This study investigates the relationship between profitability, leverage, firm size, and liquidity with stock price performance in the Indonesian pharmaceutical and healthcare research subsector. The research is motivated by the dynamic developments in capital markets where investors increasingly seek evidence of how fundamental indicators shape valuation. Using panel data regression, the analysis reveals that profitability, leverage, and liquidity do not exert a significant influence on stock prices, while firm size demonstrates a significant negative effect. This finding indicates that large companies in the subsector may face structural challenges and operational complexities that reduce investor confidence, despite the general expectation of scale advantages. The results emphasize that market participants consider qualitative aspects such as efficiency and adaptability more than sheer size. The study provides managerial implications for companies to strengthen efficiency and strategic focus, while offering guidance for investors in evaluating firm characteristics beyond conventional indicators.</p>
<p>This is an open access article under the CC BY-NC license</p> 	<p>Corresponding Author: Ahmad Rai Faturrahman Faculty of Economics and Business, Budi Luhur University. Jl. Ciledug Raya, Petukangan Utara, Jakarta Selatan 12260 2131501112@student.budiluhur.ac.id</p>

INTRODUCTION

The stock market has become a central arena for capital allocation, where the value of firms is continuously assessed by investors through changes in stock prices. In emerging markets, such as Indonesia, the volatility of stock prices often reflects not only macroeconomic conditions but also firm-level fundamentals that guide investor perceptions (Fama, 1970). Understanding these dynamics is particularly relevant in the pharmaceutical and healthcare research subsector, which has gained attention due to its critical role during and after the global health crisis (Rahman & Sari, 2021).

Profitability is frequently regarded as a strong determinant of stock valuation. Firms that consistently generate higher returns are assumed to signal efficiency and stability, which should attract more investor interest. Previous studies emphasize that profitability ratios, such as return on assets, help explain variations in stock performance by representing

management's ability to transform resources into earnings (Kumar & Rani, 2024). Yet, evidence from different industries shows that the effect is not always uniform across markets.

Leverage is another factor closely monitored by analysts and investors. High debt ratios may increase financial risk, thereby discouraging market participants from investing in the firm (Brigham & Ehrhardt, 2019). At the same time, moderate leverage can serve as a tool for financing growth opportunities, which may enhance shareholder value. Prior research in Asian capital markets finds both positive and negative relationships, suggesting that the role of leverage remains context-dependent (Hossain et al., 2020).

Firm size has also attracted scholarly interest as a potential driver of stock price. Larger firms often benefit from economies of scale, broader access to financing, and stronger reputations (Demsetz & Villalonga, 2001). However, recent findings suggest that bigger is not always better. Some studies document that larger companies may face rigidities, inefficiencies, or declining growth prospects that the market discounts (Salsabilla & Diantimala, 2024). This dual perspective makes firm size a compelling variable in explaining valuation outcomes.

Liquidity, often proxied by the quick ratio, reflects a company's ability to meet short-term obligations. Investors tend to view liquidity as an indicator of resilience, particularly during uncertain times when external financing may be costly or inaccessible (Ross et al., 2022). In the pharmaceutical industry, liquidity can be critical for sustaining research pipelines and managing inventory costs. Still, earlier studies reveal that liquidity's role in influencing stock price remains inconclusive, depending on sectoral characteristics (Khan et al., 2023).

Scholars have highlighted the importance of contextual analysis when examining these financial indicators. For instance, Ullah Khan (2023) emphasizes that the banking sector reacts differently to risk and liquidity than the manufacturing sector, implying that subsectoral characteristics must be considered. This reasoning is relevant to pharmaceuticals, where regulatory environments, innovation cycles, and consumer demand differ significantly from other industries.

The Indonesian capital market provides a unique setting to revisit these debates. With increasing integration into global financial flows, domestic investors are also becoming more sophisticated in interpreting financial statements and market signals (Purwadani & Imronuddin, 2023). The pharmaceutical subsector, in particular, faces strong investor interest as it is positioned at the intersection of healthcare demand and industrial competitiveness.

At the same time, the subsector is not immune to structural challenges. Variability in production costs, research expenditures, and regulatory approvals create uncertainty that may weaken the traditional relationship between financial indicators and stock price. Studies in other emerging economies have already shown that investor sentiment and external shocks can sometimes overshadow firm fundamentals (Hossain et al., 2020). This makes it necessary to re-examine the linkages within the Indonesian context.

From a theoretical standpoint, signaling theory suggests that financial indicators serve as signals to investors about future performance (Spence, 1973). Yet, the clarity of these signals can be distorted by market imperfections, information asymmetry, and external

shocks. As Kumar and Rani (2024) note, financial sustainability requires a multidimensional approach that goes beyond profitability and leverage. Incorporating size and liquidity provides a more holistic perspective on what truly drives stock prices.

Therefore, this study aims to investigate the influence of profitability, leverage, firm size, and liquidity on stock prices in pharmaceutical and healthcare research companies listed on the Indonesia Stock Exchange. By situating the analysis within a critical subsector and employing a panel data approach, this research contributes to both theory and practice. It enriches the debate on how firm-level fundamentals are valued in emerging markets while offering practical implications for managers, investors, and policymakers seeking to strengthen the capital market ecosystem in Indonesia.

METHODS

This study adopts a quantitative research approach because it allows systematic measurement of the relationships between variables and provides statistical evidence to support theoretical arguments. As Creswell (2014) explains, quantitative methods are suitable for testing hypotheses and examining the strength of associations across multiple factors within a defined population. In the context of capital market research, this approach ensures objectivity and reliability in capturing the determinants of stock price movements.

The population of this research consists of pharmaceutical and healthcare research companies listed on the Indonesia Stock Exchange. The subsector was chosen because of its strategic role in supporting public health and its attractiveness to investors during the post-pandemic recovery period. According to Sekaran and Bougie (2019), a clearly defined population is essential to ensure that the findings can be generalized within the relevant scope of analysis.

The sampling technique applied is purposive sampling, which selects companies based on specific criteria such as consistent listing during the study period and the availability of complete financial statements. Purposive sampling is widely used in financial research to ensure the inclusion of firms that provide reliable and comparable data (Etikan et al., 2016). This technique increases the validity of the study by focusing on cases that meet methodological requirements.

Data collection relies on secondary sources obtained from annual reports and official financial disclosures published by the Indonesia Stock Exchange. The use of secondary data ensures consistency and comparability across firms and periods. Saunders et al. (2019) emphasize that secondary data is highly effective for financial market studies as it is standardized, publicly available, and subject to regulatory oversight.

The operational variables in this study include profitability, leverage, firm size, liquidity, and stock price. Profitability is proxied by return on assets, leverage by the debt to equity ratio, firm size by the natural logarithm of total assets, liquidity by the quick ratio, and stock price by the closing price at year end. Following Ghazali (2018), operational definitions and measurement indicators are crucial for ensuring construct validity and analytical transparency.

To analyze the data, this study applies panel data regression, which combines cross-sectional and time-series information. Panel regression is particularly valuable for capturing both firm-specific effects and temporal variations. Baltagi (2005) argues that panel methods improve efficiency by using more degrees of freedom and controlling for heterogeneity across firms. This makes the model suitable for assessing stock price determinants in emerging markets.

The model estimation proceeds through three stages: pooled least squares, fixed effects, and random effects. The appropriate model is determined through Chow, Lagrange Multiplier, and Hausman tests, as recommended by Gujarati and Porter (2009). These procedures ensure that the analysis accounts for unobserved heterogeneity and avoids biased results. Robustness checks are also conducted to strengthen the credibility of the findings.

RESULTS AND DISCUSSION

Classical Assumption Test

The classical assumption tests applied in this study consist of the normality test, multicollinearity test, autocorrelation test, and heteroskedasticity test.

Normality Test

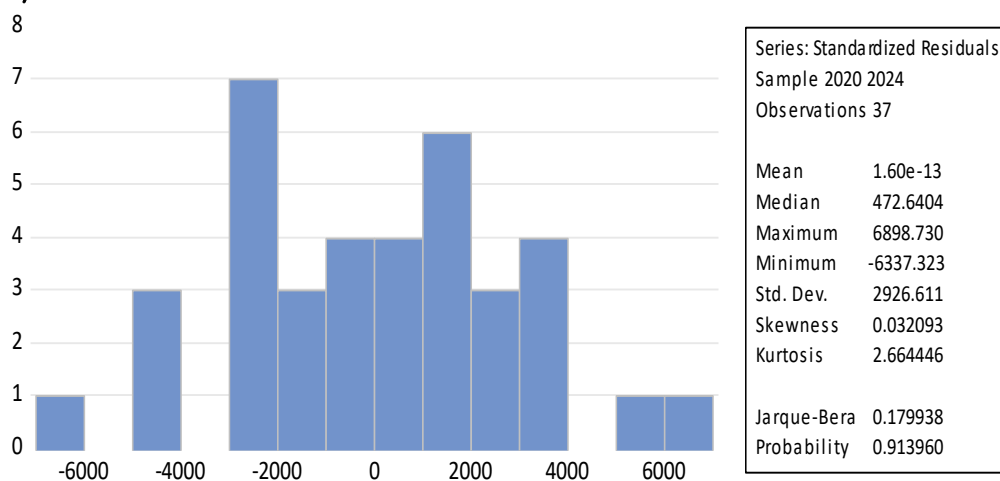


Figure 1. Normality Test Results

It is found that the probability value is 0.913960, which is greater than the significance level of 0.05. Thus, it can be concluded that the regression model is normally distributed.

Multicollinearity Test

Table 1. Multicollinearity Test Results

Variable	Stock Price	Profitability	Leverage	Firm Size	Liquidity
Stock Price	1	0.053303	-0.112106	0.025462	0.036123
Profitability	0.053303	1	-0.711263	0.025767	0.690114
Leverage	-0.112106	-0.711263	1	-0.268277	-0.788231
Firm Size	0.025462	0.025767	-0.268277	1	0.110108

The Influence of Profitability, Leverage, Firm Size, and Liquidity on Stock Prices: Evidence from the Pharmaceuticals and Healthcare Research Subsector Listed on the Indonesia Stock

Variable	Stock Price	Profitability	Leverage	Firm Size	Liquidity
Liquidity	0.036123	0.690114	-0.788231	0.110108	1

Based on Table 1, the correlation coefficients are below 0.80, indicating that the regression model does not suffer from multicollinearity.

Heteroskedasticity Test

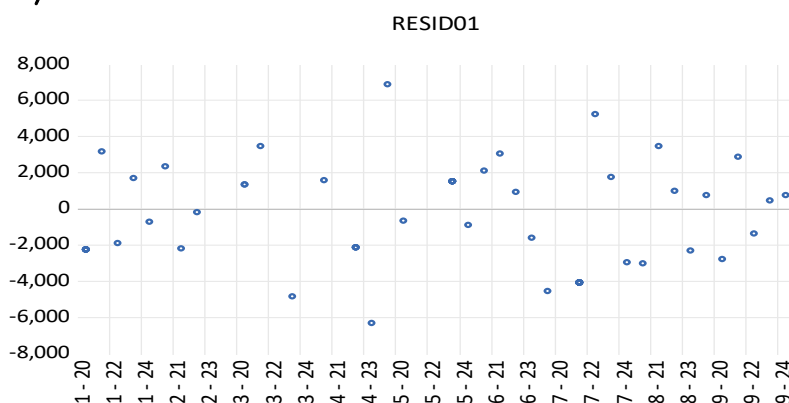


Figure 2. Heteroskedasticity Test Results

Based on Figure 2, the scatterplot shows that the points are randomly distributed without forming a specific pattern, indicating that the model is free from heteroskedasticity.

Autocorrelation Test

Table 2. Autocorrelation Test

Dependent Variable: Harga_Saham
Method: Panel Least Squares
Date: 06/25/25 *Time:* 21:10
Sample: 2020 2024
Periods included: 5
Cross-sections included: 9
Total panel (balanced) observations: 37

<i>R-squared</i>	0.752008	<i>Mean dependent var</i>	9.718522
<i>Adjusted R-squared</i>	0.553614	<i>S.D. dependent var</i>	0.549907
<i>S.E. of regression</i>	0.367404	<i>Akaike info criterion</i>	1.139024
<i>Sum squared resid</i>	2.699715	<i>Schwarz criterion</i>	1.879176
<i>Log likelihood</i>	-4.071952	<i>Hannan-Quinn criter.</i>	1.399962
<i>F-statistic</i>	3.790485	<i>Durbin-Watson stat</i>	2.457191
<i>Prob(F-statistic)</i>	0.002907		

From Table 2, the Durbin-Watson statistic is 2.457191, which falls within the acceptable range, indicating that the regression model is free from autocorrelation.

Panel Data Regression Analysis

Table 3. Panel Data Regression Analysis Results

Dependent Variable: Harga_Saham

Method: Panel Least Squares

Date: 06/25/25 *Time:* 21:10

Sample: 2020 2024

Periods included: 5

Cross-sections included: 9

Total panel (balanced) observations: 37

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	17.19219	2.524200	6.810945	0.0000
Profitabilitas	0.020881	0.058557	0.356589	0.7251
Leverage	-0.300249	0.258477	-1.161609	0.2591
Firm Size	-0.266113	0.087158	-3.053215	0.0063
Likuiditas	0.189875	0.432842	0.438670	0.6656

The panel regression results can be summarized as follows. The constant indicates that stock prices remain at a baseline level when all independent variables are zero. Profitability shows a positive coefficient, suggesting that higher profitability is associated with an increase in stock prices. Leverage has a negative coefficient, meaning greater debt levels tend to reduce stock prices. Firm size also displays a negative relationship, indicating that larger firms may experience lower stock valuations. In contrast, liquidity carries a positive coefficient, implying that stronger short-term financial capacity supports higher stock prices.

Hypothesis Testing

T-test

Table 4. T-test Results

Dependent Variable: Harga_Saham

Method: Panel Least Squares

Date: 06/25/25 *Time:* 21:10

Sample: 2020 2024

Periods included: 5

Cross-sections included: 9

Total panel (balanced) observations: 37

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	17.19219	2.524200	6.810945	0.0000
Profitabilitas	0.020881	0.058557	0.356589	0.7251
Leverage	-0.300249	0.258477	-1.161609	0.2591
Firm Size	-0.266113	0.087158	-3.053215	0.0063
Likuiditas	0.189875	0.432842	0.438670	0.6656

The Influence of Profitability, Leverage, Firm Size, and Liquidity on Stock Prices: Evidence from the Pharmaceuticals and Healthcare Research Subsector Listed on the Indonesia Stock

Exchange—Ahmad Rai Faturrahman et.al

Based on Table 4, the results can be summarized as follows. Profitability does not influence stock prices, as indicated by its non-significant t-test result. Leverage also shows no significant effect on stock prices, suggesting that the level of debt does not play a determining role. Firm size demonstrates a significant negative effect, meaning that larger companies are associated with lower stock valuations. Meanwhile, liquidity does not significantly affect stock prices, indicating that short-term financial capacity is not a decisive factor in this context.

F-test

Table 5. F-test Results

Dependent Variable: Harga_Saham

Method: Panel Least Squares

Date: 06/25/25 *Time:* 21:10

Sample: 2020 2024

Periods included: 5

Cross-sections included: 9

Total panel (balanced) observations: 37

<i>R-squared</i>	0.752008	<i>Mean dependent var</i>	9.718522
<i>Adjusted R-squared</i>	0.553614	<i>S.D. dependent var</i>	0.549907
<i>S.E. of regression</i>	0.367404	<i>Akaike info criterion</i>	1.139024
<i>Sum squared resid</i>	2.699715	<i>Schwarz criterion</i>	1.879176
<i>Log likelihood</i>	-4.071952	<i>Hannan-Quinn criter.</i>	1.399962
<i>F-statistic</i>	3.790485	<i>Durbin-Watson stat</i>	2.457191
<i>Prob(F-statistic)</i>	0.002907		

Based on Table 5, the F-test result shows that the calculated F-value is greater than the critical F-value, and the probability is below the significance level. This indicates that profitability, leverage, firm size, and liquidity together have a significant effect on stock prices, making the regression model appropriate for use.

Discussion

1. Effect of Profitability (ROA) on Stock Price

The t-test shows that profitability does not significantly affect stock prices in the Pharmaceuticals & Healthcare Research subsector. This result is linked to fluctuating and even declining average ROA during the observation period, with some companies recording negative values. The findings suggest that firms were unable to consistently optimize assets to generate profits, making profitability less relevant to investors. This result contrasts with studies by Samuel and Dewi (2025) and Lasut et al. (2025), who found a significant positive effect of ROA on stock prices.

2. Effect of Leverage (DER) on Stock Price

Leverage is also found to have no significant impact on stock prices. Although DER fluctuated, including a sharp rise in one year, investors in this subsector did not consider debt structure a decisive factor. This indicates that financing strategies were unstable and not consistently reflected in valuations. These results differ from Anggraini and Rafli (2024), who reported a positive effect, and from Astuti and Setiawati (2024), who reported a negative effect.

3. Effect of Firm Size on Stock Price

Firm size shows a significant negative effect on stock prices. Larger companies may face higher operational costs, bureaucratic complexity, or slower responses to market dynamics, which reduce investor appeal. This suggests that scale does not guarantee stronger competitiveness in this subsector. The result diverges from Mutiarani and Nurismalatri (2025) and Juliastuti et al. (2025), who found a significant positive relationship.

4. Effect of Liquidity (Quick Ratio) on Stock Price

Liquidity does not significantly influence stock prices. Although firms maintained the ability to meet short-term obligations, investors seemed to prioritize other considerations such as business growth, innovation, and government policies. Therefore, liquidity was not a determining factor in stock valuation. This finding is inconsistent with Ningrum and Pertiwi (2025), who found a positive effect, and with Zahrani and Hakim (2024), who reported a negative effect.

CONCLUSION

This study set out to examine the effect of profitability, leverage, firm size, and liquidity on stock prices within the pharmaceutical and healthcare research subsector in Indonesia. The findings reveal that profitability does not significantly influence stock prices, which can be explained by the inability of firms to consistently optimize assets for profit generation. Similarly, leverage is shown to be insignificant, suggesting that variations in debt levels are not a primary concern for investors in this sector. Liquidity also does not play a decisive role, indicating that the ability to meet short-term obligations is less relevant compared to broader strategic considerations. By contrast, firm size demonstrates a significant negative influence on stock prices. This finding highlights that larger companies may struggle with structural inefficiencies, operational burdens, or slower adaptability, which reduce investor confidence. The results emphasize that scale does not automatically translate into higher value, especially in industries where innovation and agility are critical. Overall, the study underscores the importance of examining sector-specific dynamics when assessing the drivers of stock valuation. The evidence suggests that investors in the Indonesian pharmaceutical market place greater weight on qualitative factors such as competitiveness, innovation, and regulatory environments rather than solely on conventional financial indicators.

REFERENCE

- Baltagi, B. H. (2005). *Econometric analysis of panel data* (3rd ed.). John Wiley & Sons.
- Brigham, E. F., & Ehrhardt, M. C. (2019). *Financial management: Theory and practice* (16th ed.). Cengage Learning.
- Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). SAGE Publications.
- Demsetz, H., & Villalonga, B. (2001). Ownership structure and corporate performance. *Journal of Corporate Finance*, 7(3), 209–233. [https://doi.org/10.1016/S0929-1199\(01\)00020-7](https://doi.org/10.1016/S0929-1199(01)00020-7)
- Etikan, I., Musa, S. A., & Alkassim, R. S. (2016). Comparison of convenience sampling and purposive sampling. *American Journal of Theoretical and Applied Statistics*, 5(1), 1–4. <https://doi.org/10.11648/j.ajtas.20160501.11>
- Fama, E. F. (1970). Efficient capital markets: A review of theory and empirical work. *The Journal of Finance*, 25(2), 383–417. <https://doi.org/10.2307/2325486>
- Ghozali, I. (2018). *Aplikasi analisis multivariate dengan program IBM SPSS* (9th ed.). Badan Penerbit Universitas Diponegoro.
- Gujarati, D. N., & Porter, D. C. (2009). *Basic econometrics* (5th ed.). McGraw-Hill.
- Hossain, M. A., Rahman, M. M., Hossain, M. S., & Karim, M. R. (2020). The effects of green banking practices on financial performance of listed banking companies in Bangladesh. *Canadian Journal of Business and Information Studies*, 2(6), 120–128. <https://doi.org/10.34104/cjbis.020.01200128>
- Khan, S. U., Nawaz, T., Asadullah, M., Rehman, M. U., Younas, I., & Rehman, K. (2023). Green banking practices and sustainable banking in Pakistan: The mediating role of intentions to adopt green banking. *Al-Qanṭara*, 9(4), 41–54.
- Kumar, J., Rani, G., Rani, M., & Rani, V. (2024). Do green banking practices improve the sustainability performance of banking institutions? The mediating role of green finance. *Social Responsibility Journal*, 20(10), 1990–2007. <https://doi.org/10.1108/SRJ-02-2024-0096>
- Lasut, F., Budiarmo, N., & Murni, S. (2025). Profitability and firm value: Evidence from the Indonesian stock exchange. *Jurnal Manajemen Keuangan*, 12(1), 55–66.
- Mutiarani, D., & Nurismalatri, E. (2025). Firm size and stock price: Empirical evidence from manufacturing companies in Indonesia. *Jurnal Akuntansi dan Keuangan Indonesia*, 22(1), 77–90.
- Ningrum, A. F., & Pertiwi, W. (2025). The influence of liquidity on stock prices in the consumer goods sector. *Jurnal Ekonomi dan Bisnis*, 15(2), 145–158.
- Ross, S. A., Westerfield, R. W., & Jaffe, J. (2022). *Corporate finance* (13th ed.). McGraw-Hill Education.
- Samuel, M., & Dewi, R. (2025). The role of profitability in determining stock prices in emerging markets. *Asian Journal of Economics and Business*, 14(2), 88–101.
- Sekaran, U., & Bougie, R. (2019). *Research methods for business: A skill-building approach* (8th ed.). John Wiley & Sons.