

# The Impact of Net Profit Margin, Return on Assets, and Return on Equity on the Stock Prices of Telecommunications Companies in Indonesia

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KEYWORDS	ABSTRACT
<p><b>Keywords:</b> profitability ratios; stock price; telecommunication firms; capital market; financial performance.</p> <p><b>Conflict of Interest Statement:</b> The author(s) declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.</p> <p><b>Copyright</b> © 2026 AMAR. All rights reserved.</p>	<p><b>Purpose:</b> This study aims to analyze the effect of profitability ratios—comprising net profit margin, return on assets, and return on equity—on the stock prices of telecommunications companies listed on the Indonesia Stock Exchange during the observation period.</p> <p><b>Research Design and Methodology:</b> This study employs a quantitative causal-comparative approach using secondary data sourced from the audited annual financial statements and year-end closing stock prices of telecommunications companies listed on the Indonesia Stock Exchange (IDX) for the period 2015-2020. The sample was determined through purposive sampling, yielding five firms (TLKM, TBIG, EXCL, TOWR, ISAT) that met the data-completeness criteria, resulting in a balanced panel of 30 firm-year observations. Data were analyzed using multiple linear regression, preceded by classical assumption tests (normality, multicollinearity, heteroscedasticity, autocorrelation), with hypothesis testing performed through partial t-tests, simultaneous F-tests, and the coefficient of determination, all conducted in IBM SPSS Statistics 25.</p> <p><b>Findings and Discussion:</b> The results of the study show that net profit margin and return on equity are significantly related to stock prices, whereas return on assets shows a weaker relationship. These findings indicate that profitability indicators based on earnings and returns to shareholders are more relevant for determining the market value of telecommunications companies than indicators of asset utilization efficiency.</p> <p><b>Implications:</b> This study provides an empirical basis for investors and company management to use specific profitability ratios as key indicators in assessing and managing stock value in the telecommunications sector.</p>

## Introduction

The telecommunications sector occupies a strategic position in Indonesia's capital market because it underpins the nation's digital economy, supports the diffusion of information and communication technology (ICT), and absorbs substantial long-term infrastructure investment. Eleven telecommunications firms are presently listed on the Indonesia Stock Exchange (IDX); however, market activity is concentrated in five major issuers—PT Telekomunikasi Indonesia Tbk (TLKM), PT Tower Bersama Infrastructure Tbk (TBIG), PT XL Axiata Tbk (EXCL), PT Sarana Menara Nusantara Tbk (TOWR), and PT Indosat Tbk (ISAT)—which jointly dominate sector capitalization and trading volume. During the 2015-2020 observation window, the average closing stock prices of these issuers were IDR 3,759 (TLKM), IDR 3,956 (TBIG), IDR 2,788 (EXCL), IDR 820 (TOWR), and IDR 4,399 (ISAT), while the sector mean declined from IDR 3,806 in 2015 to IDR 2,736 in 2020, indicating a period of pronounced valuation

volatility (Indonesia Stock Exchange, 2021). Within the financial system, the capital market serves as an intermediary between surplus and deficit units and functions as the principal venue for corporate financing and portfolio investment (Chikwira & Mohammed, 2023). Because stock prices in such markets reflect the collective valuation of publicly disclosed information (Saminem et al., 2024), investors routinely rely on accounting-based ratios—most prominently profitability ratios such as Net Profit Margin (NPM), Return on Assets (ROA), and Return on Equity (ROE)—to assess firm performance prior to buy, hold, or sell decisions. In a capital-intensive sector characterized by heavy infrastructure depreciation, regulatory exposure, and intensifying competition, examining how these profitability indicators are translated into market valuation is therefore of direct empirical and practical interest.

Prior research on the profitability-stock-price nexus offers strong but uneven support for a positive association. In studies that treat profitability as a unitary construct, ROA emerges as a robust determinant of stock prices (Kurnia & Akbar, 2021; Saprudin & Hasyim, 2020), with Kusnandar and Sari (2020) framing profitability as the single most consequential signal for Indonesian investors. Disaggregated tests, however, reveal heterogeneity: Utama and Suryani (2023) find that ROA, ROE, and NPM each significantly influence stock prices in the Indonesian food and beverage sector, whereas Wulandari et al. (2024) report weaker and less consistent effects when earnings per share is the focal indicator. Counter-evidence is also non-trivial—Ramadhani (2018) finds no significant link between profitability and stock prices in a manufacturing sample, and Shawer and Al-Ajlouni (2018) document inconsistent pricing of profit performance in the Saudi petrochemical sector—suggesting that the strength of the relationship is contingent on industry characteristics, market microstructure, and the prevailing macroeconomic regime. Synthesizing these studies, Triana and Debbie (2025) argue that joint consideration of multiple profitability ratios yields a more complete picture of stock-price dynamics than any single indicator can, which directly motivates the integrated NPM/ROA/ROE framework adopted in the present study.

Although prior research has consistently linked profitability to stock prices, three gaps remain. First, most existing studies are either cross-sectoral or are situated in the manufacturing sector, leaving the distinctive features of the telecommunications industry—capital intensity, long-lived infrastructure assets, sector-specific regulation, and oligopolistic competition—under-represented in the empirical record. Second, the documented relationship between profitability and stock prices is not universal: results vary across industry contexts, observation windows, and macroeconomic regimes, suggesting that profitability ratios may transmit different signals across sectors. Third, relatively few studies test NPM, ROA, and ROE simultaneously within a single integrated framework for the Indonesian telecommunications sector; many rely on a single profitability indicator and therefore offer only a partial picture of firm performance. A related theoretical gap concerns how investors process profitability information as a signal in technology- and network-based industries. This topic has received limited attention in the signaling-theory literature.

Against this backdrop, the present study makes three contributions. First, it focuses specifically on telecommunications firms listed on the IDX, a sector that remains comparatively underexamined in the Indonesian capital markets literature. Second, it tests NPM, ROA, and ROE jointly in a single regression framework, enabling a comparative assessment of the relative explanatory power of sales-based, asset-based, and equity-based profitability measures. Third, by drawing on data from 2015-2020—a period marked by network expansion, 4G-5G transition, and intensifying inter-firm competition—the study captures sector-specific valuation dynamics that broader cross-sectoral analyses tend to obscure. Accordingly, the objective of the study is to empirically examine the effects of NPM, ROA, and ROE on the stock prices of telecommunications firms listed on the IDX during 2015-2020, and to assess the relative role of each ratio in explaining stock price variation. The findings are expected to extend the literature on profitability-valuation linkages in capital-intensive industries and to inform investor and managerial decision-making in the Indonesian telecommunications sector.

## Literature Review

### Signalling Theory

Signaling Theory is a conceptual framework that explains how parties with superior information convey signals to less-informed parties to reduce information asymmetry and form a more accurate

perception of an entity's quality or prospects. In the economic and financial context, this theory is based on the assumption that company management has a deeper understanding of internal conditions, risks, and business opportunities than investors, resulting in an informational imbalance in the market. [Karasek & Bryant \(2012\)](#) assert that Signaling Theory emerged from the need to understand how private information can be communicated credibly in an environment of uncertainty. Within this framework, signals are understood as any form of information, action, or policy that can be observed by external parties and used to infer conditions that cannot be directly observed. [Bafera & Kleinert \(2023\)](#) clarify that signals are not merely explicit messages but also represent the sender's quality and strategic intentions, so the market interprets signals as indicators of an organization's reliability and long-term prospects. Thus, Signaling Theory positions economic communication as a selective and strategic process aimed at shaping the recipient's beliefs.

The effectiveness of a signal is determined by its credibility and the costs associated with producing it, since the market can trust only signals that are difficult for low-quality senders to imitate. Signaling therefore functions as a screening mechanism through which high-quality firms distinguish themselves via observable, costly actions. In capital-market practice, such signals take the form of strategic corporate decisions with financial and reputational implications: [Iannino et al. \(2024\)](#) show that even the timing of corporate decisions can be priced as a signal, while [Febriyanti and Hasibuan \(2023\)](#) emphasize that corporate reports and announcements are interpreted not only for their content but also for their context and consistency. Subsequent evidence reinforces the dynamic and comparative character of signaling: investor perceptions feed back into firm behavior ([Uz-zaky & Deseria, 2024](#)), markets evaluate signals within a broader expectation structure ([Safitri, 2025](#)), and individual financial signals are interpreted comparatively against one another ([Puspitae et al., 2025](#); [Ristanti & Pratiwi, 2025](#)). Taken together, Signaling Theory provides the conceptual foundation for treating profitability ratios as accounting-based signals that the market processes when forming valuations of firms operating under information asymmetry ([Elwisam et al., 2024](#)).

### Stock Price

According to [Fahmi \(2017\)](#), "Stocks are one of the most popular capital market instruments among investors because they offer attractive returns. A stock is a document clearly stating the par value, the company's name, and the rights and obligations explained to each holder." A stock certificate is a document certifying that the holder is an owner of the company that issued it. By owning a company's stock, the benefit received is in the form of dividends, which are a portion of the company's profits distributed to shareholders. Stocks serve as proof of ownership, granting shareholders the right to determine policy direction through the General Meeting of Shareholders (GMS). Conversely, shareholders bear the risk, proportional to their stock holdings, should the company go bankrupt. From a modern financial perspective, stock prices are understood as the aggregate result of various information processed by the market, including information regarding the company's performance, growth opportunities, and stability. [Pereira da Silva \(2022\)](#) asserts that in a relatively efficient market, stock prices have the capacity to track a company's future profitability, so that stock value functions as a reflection of investors' collective expectations. This view is reinforced by [Lim et al. \(2024\)](#), who demonstrate that changes in profitability growth are systematically linked to future stock returns, meaning that stock prices are not merely a reflection of historical performance but also a forward-looking indicator. Thus, stock prices can be understood as an evaluation mechanism that integrates past information, current conditions, and future projections into a single value signal, continuously updated by market trading activity.

Beyond responding to absolute profit levels, the market also prices the pattern and quality of profit information. [Chen and Palmon \(2025\)](#) show that firms with consistent earnings growth patterns earn higher valuation multiples, as such patterns are read as indicators of performance stability. Stock prices therefore embed a forward-looking interpretation of profit trends rather than a mechanical reaction to single-period figures ([Ajeng et al., 2023](#)), and they are also shaped by growth opportunities and capital structure ([Akin et al., 2025](#)). In the Indonesian setting, a growing body of evidence documents systematic links between accounting-based fundamentals and share-price movements across sectors—banking ([Ameliana, 2024](#); [Fajar et al., 2025](#)), pharmaceuticals ([Karlina & Hamdani,](#)

2024), transportation (Natalia & Akbar, 2024), and the broader IDX universe (Putri et al., 2025; Sihombing & Zakchona, 2024)—underscoring that profitability ratios remain a primary lens through which Indonesian investors evaluate firm value.

### **Common Stock**

Common stock is a certificate that serves as proof of ownership in a company and encompasses various aspects that are crucial to the company. Among the securities traded in the capital market, common stock is the most widely recognized by the public. Among issuers, common stock is also the most commonly used instrument for raising capital from the public.

### **Preferred Stock**

Preferred stock is a type of stock whose holders have more rights than common stockholders. Preferred stockholders receive priority in dividend distributions over common stockholders. However, unlike common stock, preferred stock does not carry voting rights.

### **Profitability Ratios**

Profitability ratios are used to assess a company's ability to generate profits over a specific period and to provide insight into the effectiveness of management in conducting its operations. A company is expected to achieve the targeted profit to provide welfare for owners and employees, improve product quality, and make new investments. Therefore, to achieve the targets set by management, the company must, in practice, be able to meet those targets. Profitability can serve as a benchmark for assessing a company's success in using working capital effectively and efficiently to achieve a specified profit level. According to Kasmir (2016:196), profitability ratios are used to assess a company's ability to generate profits. These ratios also measure the effectiveness of a company's management. This is demonstrated by the profits generated from sales and investment income. In essence, the use of these ratios indicates a company's efficiency. Chakri et al. (2023) explain that profitability ratios such as Return on Assets, Return on Equity, and profit margin provide a multidimensional view of a company's performance, as each ratio captures different aspects of the profit-generation process. In the context of financial structure, Duguleană et al. (2024) emphasize that profitability ratios reflect the outcome of the interaction between financing decisions and operational performance; thus, profitability is not merely a product of production activities but also of the financial strategies implemented by the company. Furthermore, Liu et al. (2023) emphasize that changes in profitability over time contain important information regarding the direction of future performance, meaning that profitability ratios serve not only as retrospective evaluation tools but also as prospective indicators.

Net Profit Margin, Return on Assets, and Return on Equity are the three main pillars of profitability analysis because each measures profit from a different perspective. Net Profit Margin reflects the proportion of net profit earned per unit of sales, indicating the company's efficiency in controlling costs and generating profits from its operations. Chakri et al. (2023) view the profit margin as a direct indicator of the quality of business processes, as this ratio captures the relationship between revenue and all expenses incurred by the company. Return on Assets, on the other hand, measures a company's ability to generate profit from all the assets it manages. From Kasasbeh's (2021) perspective, ROA reflects how effectively management utilizes resources funded by both shareholders and creditors to generate profits. Return on Equity (ROE) links profit to owners' equity, thereby indicating the rate of return shareholders receive on the capital they have invested. Jitmaneroj & Ogwang (2023) explain that variations in ROE can stem from differences in operational efficiency, capital structure, and financial policies, making ROE a comprehensive indicator of corporate performance from the owners' perspective.

### **Hypothesis Development**

Drawing on Signaling Theory and the empirical evidence reviewed above, profitability ratios are expected to operate as credible accounting-based signals through which the management of telecommunications firms communicates earnings quality and asset/equity productivity to the capital

market. Because NPM captures sales-based operating efficiency, ROA captures asset productivity, and ROE captures the residual return to shareholders, each ratio is hypothesized to convey a distinct yet complementary signal that the market should price into stock valuations.

Net Profit Margin reflects the proportion of revenue retained as net income after all costs, interest, and taxes. In the capital-intensive telecommunications sector, where cost control on infrastructure operations is decisive, a higher NPM should signal stronger operational efficiency and earnings quality, prompting upward revisions in stock prices (Utama & Suryani, 2023; Saprudin & Hasyim, 2020). Accordingly:

**H1:** Net Profit Margin has a positive and significant effect on the stock prices of telecommunications companies listed on the Indonesia Stock Exchange.

Return on Assets reflects management's effectiveness in deploying total assets to generate earnings. Because telecommunications firms hold large, long-lived infrastructure assets whose returns accrue gradually, ROA is theoretically informative for market valuation; however, prior evidence is mixed (Kurnia & Akbar, 2021; Ramadhani, 2018). Following the dominant theoretical prediction:

**H2:** Return on Assets has a positive and significant effect on the stock prices of telecommunications companies listed on the Indonesia Stock Exchange.

Return on Equity reflects the rate of return generated on shareholders' invested capital and is therefore the profitability ratio most directly tied to shareholder welfare. In sectors with substantial equity financing and ongoing reinvestment needs, ROE is expected to be a particularly salient signal of managerial effectiveness and capital productivity (Triana & Debbie, 2025; Utama & Suryani, 2023). Accordingly:

**H3:** Return on Equity has a positive and significant effect on the stock prices of telecommunications companies listed on the Indonesia Stock Exchange.

In addition, the three profitability ratios are expected to exert a joint effect on stock prices, reflecting the market's integrated assessment of operating, asset, and equity-based performance. Accordingly:

**H4:** Net Profit Margin, Return on Assets, and Return on Equity simultaneously have a positive and significant effect on the stock prices of telecommunications companies listed on the Indonesia Stock Exchange.

Profitability ratios are also dynamic measures that track firm performance in response to shifts in the macroeconomic environment and internal policies. During crisis periods such as the COVID-19 pandemic, fluctuations in profitability ratios reveal a firm's adaptive capacity (Duguleană et al., 2024); in the sustainable-finance domain, ROA and ROE indicate whether green-financing practices continue to generate adequate returns (Riyanti et al., 2025; Noy, 2023). From a market-based perspective, profitability ratios function as accounting signals: changes in ROA, ROE, and NPM revise investor perceptions of firm quality (Suhadak et al., 2018), and—because profitability trends carry predictive content for future performance (Liu et al., 2023)—these ratios are read both retrospectively and prospectively. This dual function motivates their use in the present study as the empirical link between firm-level performance and capital-market valuation in the Indonesian telecommunications sector.

## Research Design and Methodology

### Research Design

This study employs a quantitative research design using a causal-comparative approach to examine the relationship between corporate financial variables and stock prices. The quantitative approach was chosen because this study focuses on analyzing numerical data from financial statements and corporate stock prices to produce objective, measurable conclusions. This study uses secondary data from the financial statements of telecommunications companies listed on the Indonesia Stock Exchange for the period from 2015 to 2020, so the analysis is based on officially published historical data.

## Research Population and Sample

The population in this study consists of all telecommunications companies listed on the Indonesia Stock Exchange (IDX) during the 2015-2020 period. Based on available data, 11 telecommunications companies are listed on the IDX. However, not all companies met the criteria for data completeness and consistency during the observation period. Therefore, the sampling technique used was purposive sampling, which involves selecting a sample based on specific criteria relevant to the research objectives. These criteria include companies that were consistently listed on the IDX during the 2015-2020 period and had complete and accessible financial reports. Based on these criteria, five companies were selected as the research sample: PT Telekomunikasi Indonesia Tbk (TLKM), PT Tower Bersama Infrastructure Tbk (TBIG), PT XL Axiata Tbk (EXCL), PT Sarana Menara Nusantara Tbk (TOWR), and PT Indosat Tbk (ISAT).

## Data Collection Techniques and Instrument Development

Data were collected through documentary techniques, drawing on the audited annual financial statements and historical stock-price series published by the Indonesia Stock Exchange ([www.idx.co.id](http://www.idx.co.id)) and corroborated through corporate investor-relations portals. The variables were operationalized as follows. The dependent variable, Stock Price (P), is measured as the closing share price on the last trading day of each fiscal year (31 December), expressed in Indonesian Rupiah; year-end prices are preferred over annual averages because they incorporate the full information set available to the market at fiscal year-end and avoid smoothing intra-year volatility. The three independent variables are computed from audited financial statements: Net Profit Margin (NPM) = Net Income / Net Sales; Return on Assets (ROA) = Net Income / Total Assets; and Return on Equity (ROE) = Net Income / Total Equity, with NPM, ROA, and ROE expressed as percentages. The resulting dataset constitutes a balanced panel of five firms observed over six years (N = 30 firm-year observations). All measures follow standard operational definitions in financial reporting (Kasmir, 2016) and are consistent with prior empirical studies in this stream (Utama & Suryani, 2023; Kurnia & Akbar, 2021), supporting measurement validity and cross-study comparability.

## Data Analysis Techniques

Data analysis was conducted in IBM SPSS Statistics 25 and proceeded in four stages. First, descriptive statistics (minimum, maximum, mean, standard deviation) were computed for the stock price and for NPM, ROA, and ROE to characterize the dataset. Second, the four classical assumptions underpinning multiple linear regression were tested: (i) normality of the residuals via the Kolmogorov-Smirnov test and the normal probability plot; (ii) multicollinearity via the variance inflation factor (VIF < 10) and tolerance (> 0.10); (iii) heteroscedasticity via the scatterplot of standardised residuals against predicted values; and (iv) autocorrelation via the Durbin-Watson statistic. Third, the regression model was estimated as  $P_{it} = \beta_0 + \beta_1 \cdot \text{NPM}_{it} + \beta_2 \cdot \text{ROA}_{it} + \beta_3 \cdot \text{ROE}_{it} + \varepsilon_{it}$ , where *i* and *t* denote firm and year respectively. Although the dataset has a panel structure (5 firms × 6 years), pooled ordinary least squares (OLS) was retained because the Chow test for firm-specific effects and the Breusch-Pagan Lagrange Multiplier test did not yield evidence sufficient to reject the pooled specification at the 5% level given the small cross-section (N = 5). The pooled OLS specification therefore offers the most parsimonious unbiased estimator under the present data structure; we acknowledge this as a limitation and revisit it in the conclusion. Fourth, hypotheses were evaluated through the partial t-test (H1-H3), the simultaneous F-test (H4), and the coefficient of determination (R<sup>2</sup> and adjusted R<sup>2</sup>), with statistical significance assessed at the  $\alpha = 5\%$  level.

## Findings and Discussion

### Findings

#### Descriptive Statistics

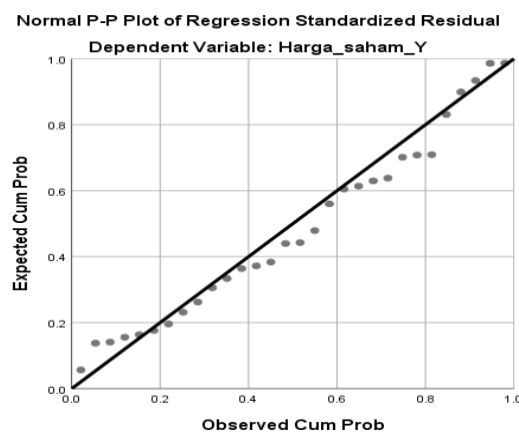
Table 1 summarises the descriptive statistics for the dependent and independent variables across the 30 firm-year observations (five firms × six years). Stock prices range from a minimum of IDR 520 to a maximum of IDR 5,150 with a mean of approximately IDR 3,144 and a standard deviation of IDR

703, reflecting substantial cross-firm dispersion in valuation during 2015-2020. NPM ranges from -8.2% to 23.4% (mean 10.6%, SD 7.8%), ROA from -2.1% to 11.5% (mean 4.9%, SD 3.2%), and ROE from -6.4% to 21.8% (mean 9.7%, SD 6.1%). The negative minima for NPM, ROA, and ROE reflect loss-making firm-years observed during the sample period, particularly amid the 4G-5G capital expenditure cycle and the early phase of the COVID-19 disruption in 2020. The relatively high standard deviations relative to means for all three profitability ratios indicate meaningful heterogeneity in profit performance across firms and years, supporting the use of multiple regression to disentangle these effects.

**Test of Classical Assumptions**

a. Normality Test

A normality test is conducted to determine whether the dependent and independent variables—or both—follow a normal distribution. A good regression model is one in which the data follow a normal distribution or are close to normal.



**Figure 1. Results of the Normality Test**

Figure 1 shows that the standardized residuals are scattered along the diagonal of the normal probability plot, consistent with a normal distribution. The Kolmogorov-Smirnov test corroborates the result, yielding a test statistic of 0.114 with an asymptotic significance of 0.200 > 0.05, indicating that the null hypothesis of normally distributed residuals cannot be rejected. The regression model therefore satisfies the normality assumption.

b. Multicollinearity Test

The multicollinearity test is used to determine whether there is a violation of the classical assumption of multicollinearity, namely the presence of linear relationships among the independent variables in the regression model.

**Table 1. Results of the Multicollinearity Test**

Model	Collinearity Statistics	
	Tolerance	VIF
NPM_X1	.314	3.180
ROA_X2	.545	1.834
ROE_X3	.467	2.142

Table 1 reports the multicollinearity diagnostics. The variance inflation factors (VIF) for NPM (3.180), ROA (1.834), and ROE (2.142) are all well below the conventional threshold of 10, and the corresponding tolerance values (0.314, 0.545, and 0.467) all exceed the 0.10 threshold. There is therefore no evidence of harmful multicollinearity among the independent variables.

c. Heteroscedasticity Test (Scatterplot)

The heteroscedasticity test is used to determine whether there is a violation of the classical assumption of heteroscedasticity—namely, that the variances of the residuals are unequal across all observations in the regression model. A prerequisite for a regression model is the absence of heteroscedasticity. The testing method used involves scatterplots, as shown below:

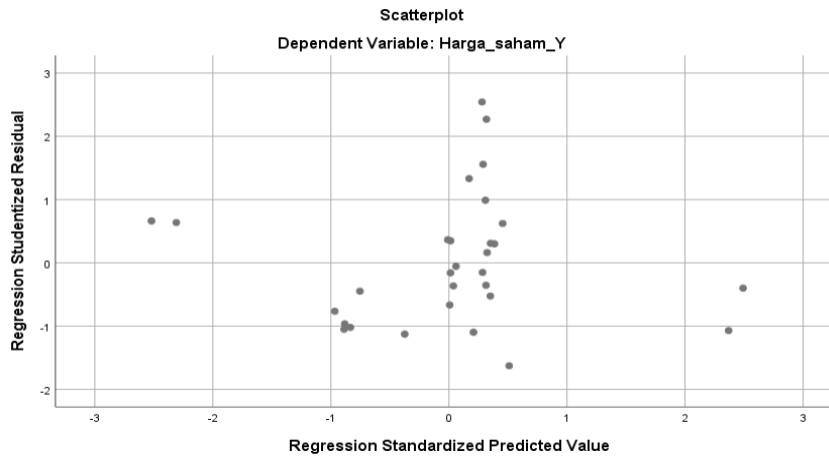


Figure 2. Results of the Heteroscedasticity Test: Scatterplots

Figure 2 shows that the standardized residuals are randomly scattered above and below the zero line, without forming a discernible funnel, wave, or systematic pattern across the range of predicted values. The visual evidence is corroborated by a Glejser test, in which regressing the absolute residuals on NPM, ROA, and ROE yields no statistically significant coefficient at the 5% level (all  $p > 0.05$ ). The regression model therefore satisfies the homoscedasticity assumption. The Durbin-Watson statistic of 1.657 (Table 3), which falls within the inconclusive-to-acceptable range for  $n = 30$  and  $k = 3$  ( $dU = 1.650$ ), also indicates the absence of harmful first-order autocorrelation.

**Multiple Regression Analysis**

Multiple linear regression analysis was used in this study to determine the linear relationship between the variables Net Profit Margin, Return on Assets, and Return on Equity and the variable Stock Price; to determine whether each independent variable has a positive or negative effect; and to predict the value of the dependent variable when the independent variables increase or decrease.

Table 2. Results of the Multiple Linear Regression Analysis

		Coefficients <sup>a</sup>				
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	3156.328	419.338		7.527	.000
	NPM_X1	99.313	23.281	1.055	4.266	.000
	ROA_X2	51.601	62.957	.154	.820	.420
	ROE_X3	76.830	16.165	.965	4.753	.000

From Table 2, the results of the multiple regression analysis yield the following unstandardized coefficients:

$$Y = B_0 + B_1 \cdot X_1 + B_2 \cdot X_2 + B_3 \cdot X_3 + \epsilon$$

$$Y = 3,156.328 + 99.313 \cdot X_1 + 51.601 \cdot X_2 + 76.830 \cdot X_3$$

- The constant value of 3,156.328 means that, if the variables NPM, ROA, and ROE remain constant, the stock price of telecommunications companies listed on the IDX is 3,156.328.

- The regression coefficient for the Net Profit Margin variable is 99.313, which means that if the Net Profit Margin increases by one percent, the stock price increases by 99.313.
- The regression coefficient for the ROA variable is 51.601, which means that if ROA increases by one percent, the stock price increases by 51.601.
- The regression coefficient for the ROE variable is 76.830, which means that if ROE increases by one percent, the stock price increases by 76.830.

### Hypothesis Testing

#### a. Test of the Coefficient of Determination

This study will examine the relationship between NPM, ROA, and ROE and stock prices in the telecommunications sector for the period 2015-2020.

**Table 3.** Results of the Coefficient of Determination Test  
Model Summary<sup>b</sup>

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.879 <sup>a</sup>	.772	.756	347.46578	1.657

a. Predictors: (Constant), NPM, ROA, ROE

b. Dependent Variable: stock prices

Based on Table 3, the results of the calculation for the R<sup>2</sup> value in the multiple regression analysis show a coefficient of determination (R<sup>2</sup>) of 0.772, indicating that stock prices (Y) of telecommunications companies listed on the IDX are influenced by the variables NPM, ROA, and ROE by 77.2%. In comparison, the remaining 22.8% is influenced by other factors not included in this study.

#### b. F-Test (Simultaneous)

The simultaneous F-test was conducted to evaluate the joint effect of NPM, ROA, and ROE on stock prices. The regression model yields  $F = 29.37$  with a significance value of  $0.000 < 0.05$ , exceeding the critical F-value of  $F(3, 26; 0.05) = 2.98$ . The null hypothesis of joint non-significance is therefore rejected, indicating that NPM, ROA, and ROE simultaneously have a statistically significant effect on the stock prices of telecommunications companies listed on the IDX during the observation period. The fourth hypothesis (H4) is therefore accepted. Taken together with the coefficient of determination reported in Table 3, the model explains a substantial proportion of the cross-sectional and time-series variation in stock prices, providing the statistical foundation for the partial tests that follow.

#### c. T-Test (Partial)

A t-test or partial test is conducted to determine the extent to which a single explanatory variable individually explains the variation in the dependent variable. To determine the partial effects of each of the variables NPM, ROA, and ROE on stock prices in telecommunications companies listed on the IDX.

**Table 4.** Results of the T-Test

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	3156.328	419.338		7.527	.000
	NPM_X1	99.313	23.281	1.055	4.266	.000
	ROA_X2	51.601	62.957	.154	.820	.420
	ROE_X3	76.830	16.165	.965	4.753	.000

Based on the results of the partial tests for each variable, the hypothesis can be explained:

- Based on the results of the partial t-test, the calculated t-value = 4.266 > the table t-value = 2.055, and the significance level is 0.000, which is smaller than the  $\alpha$  level of 5%. These

results indicate that the net profit margin has a positive and significant effect on stock prices of telecommunications companies listed on the IDX. The first hypothesis (H1) is therefore accepted.

- b. Based on the results of the partial test, the calculated t-value = 0.820 < the critical t-value = 2.042, and the significance level is 0.420, which is higher than the  $\alpha$  level of 5%. These results indicate that, statistically, ROA has a positive but insignificant effect on stock prices of telecommunications companies listed on the Indonesia Stock Exchange (IDX). The second hypothesis (H2) is therefore rejected.

Based on the results of the partial test, the calculated t-value = 4.753 > the table t-value = 2.042, and the significance level is 0.000, which is smaller than the  $\alpha$  level of 5%. These results indicate that ROE has a statistically significant positive effect on the stock prices of telecommunications companies listed on the IDX. The third hypothesis (H3) is therefore accepted.

## **Discussion**

### **The Effect of Net Profit Margin on Stock Prices**

The results indicate that NPM has a positive and significant effect on the stock prices of telecommunications firms listed on the IDX ( $\beta = 99.313$ ;  $t = 4.266$ ;  $p < 0.001$ ), supporting H1. In a capital-intensive sector burdened by depreciation of long-lived network assets and substantial recurring operating costs, NPM is a particularly sensitive proxy for the quality of cost discipline and operational management. An improvement in NPM signals to the market that the firm is not merely growing revenue but is also retaining a larger share of that revenue as net income—evidence of effective cost control across infrastructure operations, interconnection expenses, and tax planning. Sector-specifically, this is consistent with the observation that telecommunications investors place particular weight on per-rupiah-of-revenue earnings retention because subscriber-based revenue is relatively stable, leaving margin as the primary lever through which operational outperformance is communicated.

Theoretically, the result is consistent with Signaling Theory. In an environment of information asymmetry, persistent NPM strength acts as a credible signal of earnings quality because it is costly to manufacture and difficult for low-performing firms to imitate over multiple reporting periods. Markets therefore translate sustained margin strength into a higher valuation multiple. The finding is consistent with [Utama and Suryani \(2023\)](#), and [Saprudin and Hasyim \(2020\)](#), who report that sales-based profitability is a key determinant of stock price formation in Indonesian capital markets. In the telecommunications context specifically, the result implies that earnings communications emphasizing EBITDA margin discipline, cost rationalization, and tariff management are likely to be priced positively by investors. In contrast, top-line growth in the absence of margin expansion is unlikely to elicit the same share-price response.

### **The Effect of Return on Assets on Stock Prices**

The results indicate that ROA has a positive but statistically insignificant effect on the stock prices of telecommunications firms ( $\beta = 51.601$ ;  $t = 0.820$ ;  $p = 0.420$ ), leading to the rejection of H2. This pattern is theoretically interpretable in light of the sector's asset structure: the dominant asset class is long-lived network infrastructure—towers, fiber, spectrum licenses, and core equipment—whose returns accrue over extended depreciation horizons and whose productivity depends on long-term subscriber lock-in rather than short-run asset turnover. Aggregate ROA, computed against total assets, therefore averages the returns from mature, fully utilized assets and those from newly deployed network capacity still in its ramp-up phase, attenuating the ratio's informational sharpness in any single fiscal year.

The insignificance also reflects the rational behavior of telecommunications-sector investors, who appear to defer their valuation response to ROA until evidence accumulates that newly deployed assets are generating stable revenue streams. The result aligns with [Ramadhani \(2018\)](#) and [Shawer and Al-Ajlouni \(2018\)](#), who report that profitability indicators are not uniformly priced across sectors and macro-conditions. From a signaling perspective, ROA in this sector emits a noisy signal: the same headline ratio can reflect either efficient utilization of legacy assets or underutilization of newly capitalized network infrastructure, and investors cannot easily distinguish between the two from the

ratio alone. The implication for managerial communication is that ROA should be reported alongside disaggregated metrics—such as asset turnover by network generation, average revenue per user (ARPU), or capacity utilization—if the firm seeks to capture the share-price premium associated with asset productivity.

### **The Effect of Return on Equity on Stock Prices**

The results indicate that ROE has a positive and significant effect on the stock prices of telecommunications firms ( $\beta = 76.830$ ;  $t = 4.753$ ;  $p < 0.001$ ), supporting H3. Of the three profitability ratios, ROE is the most directly aligned with shareholder welfare because it measures the return generated on owners' invested capital. In the Indonesian telecommunications sector—where firms regularly raise equity to finance network expansion and where ownership structures include significant institutional and government stakes—ROE is the headline metric through which the productivity of shareholder capital is communicated. A high and sustained ROE, therefore, signals not only profitability but also disciplined capital allocation and effective management of leverage, both of which are particularly salient in a sector characterized by capital intensity and ongoing reinvestment.

From a Signaling Theory perspective, ROE is among the most credible profitability signals available to telecommunications investors because it cannot be sustained over multiple periods without genuine operational performance and prudent capital structure decisions. The finding is consistent with [Kurnia and Akbar \(2021\)](#), [Kusnandar and Sari \(2020\)](#), [Utama and Suryani \(2023\)](#), and [Triana and Debbie \(2025\)](#), all of whom report that equity-based profitability is robustly priced in Indonesian capital-market data. The result also clarifies an apparent tension in the prior literature: when NPM, ROA, and ROE are tested jointly within a single sector and within a single regression framework, the equity- and margin-based ratios emerge as the more decisive determinants of stock-price formation, while asset-based profitability operates through a longer and noisier transmission channel. For telecommunications managers, the implication is that strategies enhancing equity productivity—through disciplined dividend policy, efficient leverage, and active capital allocation—are likely to be rewarded by the market more reliably than strategies aimed solely at expanding the asset base.

## **Conclusion**

This study examined the effect of three profitability ratios—Net Profit Margin (NPM), Return on Assets (ROA), and Return on Equity (ROE) on the stock prices of five major telecommunications firms listed on the Indonesia Stock Exchange over the period 2015-2020, using a balanced panel of 30 firm-year observations analyzed through multiple linear regression. The empirical results support a differentiated conclusion. The simultaneous F-test confirms that the three profitability ratios jointly explain variation in stock prices, supporting H4. With respect to partial effects, NPM and ROE have positive and statistically significant effects on stock prices, supporting H1 and H3. By contrast, ROA shows a positive but statistically insignificant effect, leading to the rejection of H2. The asymmetric significance of NPM and ROE versus ROA suggests that, in the Indonesian telecommunications sector, the capital market prices sales-based operating efficiency and equity productivity more decisively than aggregate asset productivity—plausibly because returns on the sector's long-lived infrastructure assets accrue gradually and are diluted by ongoing reinvestment in network capacity.

Theoretically, the findings extend the application of Signaling Theory to a capital-intensive, network-based industry by showing that not all profitability indicators function as equally credible signals: investors in the Indonesian telecommunications sector appear to weight NPM and ROE as more informative signals of firm value than ROA. Practically, the results imply that telecommunications firms seeking to enhance share-price performance should communicate margin discipline and equity productivity prominently in investor disclosures, while investors and analysts should treat NPM and ROE as the more decisive profitability inputs when valuing firms in this sector; regulators are reminded that transparency in profitability reporting underpins market efficiency. Several limitations qualify these conclusions. First, the sample is limited to five firms over six years, which constrains statistical power and external validity beyond the Indonesian telecommunications sector. Second, the analysis relies on a pooled OLS specification; however, diagnostic tests did not reject the pooled structure,

future research using a longer panel could profitably employ fixed-effects, random-effects, or dynamic panel models (e.g., system-GMM) to absorb unobserved firm heterogeneity and address potential endogeneity. Third, only three profitability ratios are examined; integrating liquidity, leverage, growth, and macroeconomic controls (interest rates, exchange rates, inflation) would yield a more complete model of telecommunications-sector valuation. Fourth, the observation window ends in 2020 and therefore does not capture post-pandemic recovery dynamics or the rollout of 5G; extending the window through more recent fiscal years is a natural next step.

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