

The Effect of Total Asset Turnover, Debt-to-Equity Ratio, and Net Profit Margin on Stock Returns: Empirical Evidence from FMCG's Sub-Sector Companies Listed on the Indonesia Stock Exchange (2023–2025)

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Abstract

This study empirically investigates the influence of Total Asset Turnover (TATO), Debt-to-Equity Ratio (DER), and Net Profit Margin (NPM) on stock returns among retail sub-sector companies listed on the Indonesia Stock Exchange (IDX) over the 2023–2025 period. Anchored in Signaling Theory, this study posits that financial ratios function as informational signals that shape investor perception and, consequently, equity valuation in the capital market. The retail sector was selected as the research locus given its acute sensitivity to macroeconomic fluctuations and the structural challenges posed by the post-COVID-19 recovery environment. This study adopts a quantitative causal research design using secondary data obtained from annual financial statements and official stock price records. A purposive sampling technique yielded a final sample of 20 companies, generating 80 panel observations. Data were analyzed using panel data regression with the Common Effect Model (CEM) selected as the most appropriate estimator based on the Chow Test and Lagrange Multiplier Test. To address detected heteroscedasticity, the Panel Estimated Generalized Least Squares (EGLS) with cross-section weights was applied. The findings reveal that TATO and NPM each exert a positive and statistically significant effect on stock returns, whereas DER demonstrates no significant influence. Simultaneously, all three variables jointly explain 31.47% of the variation in stock returns, with the remaining variance attributable to external macroeconomic and firm-specific factors beyond the model's scope. These results corroborate the signaling framework by confirming that asset utilization efficiency and net profitability constitute the principal fundamental signals prioritized by market participants in the retail industry. The findings carry practical implications for both investors — who are advised to emphasize operational efficiency and profitability metrics in their stock selection process — and for corporate management, which should treat asset optimization and margin improvement as strategic levers for enhancing market valuation.

INTRODUCTION

Capital markets play a pivotal role as instruments for distributing economic resources while simultaneously serving as strategic investment vehicles that offer potential returns for capital holders. In this context, stock returns function as a fundamental parameter representing investment performance while reflecting the market's assessment of a firm's managerial prospects (Anisa, Agung, and Nurcahyono 2022; Irawan 2021). Theoretically, fluctuations in stock returns are not solely determined by external market dynamics but are also substantially influenced by a firm's fundamental condition as captured in its financial statements (Manulang, Panjaitan, and Damanik 2021). On this basis, financial ratios serve as critical instruments for dissecting the future prospects of publicly listed companies while simultaneously functioning as strategic foundations for investors in formulating their investment policy decisions.

The FMCG's industry listed on the Indonesia Stock Exchange (IDX) is confronting increasingly complex operational challenges, particularly during the post-COVID-19 pandemic recovery phase. The structural shift in consumer spending patterns, accompanied by purchasing power volatility and changing business model paradigms, has compelled FMCG's industry players to optimize operational efficiency in order to sustain their competitive advantage. These conditions have exerted a significant influence on financial performance uncertainty and stock return attainment among FMCG's sector issuers (Angelene and Junita 2022). Given its inherent

sensitivity to macroeconomic fluctuations, the FMCG's industry constitutes a representative research locus for examining the various fundamental variables that influence stock returns.

Based on the calculation, it is evident that stock return movements among FMCG's sub-sector companies exhibited highly volatile patterns throughout the 2021–2024 observation period. Several companies recorded substantial return surges during certain periods, yet experienced equally sharp contractions in others. This condition indicates that stock return movements are inherently unstable and cannot be predicted with consistent reliability.

Theoretically, a comprehensive picture of a business entity's operational effectiveness can be assessed through the dimensions of activity ratios, solvency levels, and profitability attainment. Total Asset Turnover (TATO) represents the degree to which a firm effectively mobilizes its total assets to generate sales revenue, while the Debt-to-Equity Ratio (DER) captures the composition of capital structure and the degree of financial risk exposure, and Net Profit Margin (NPM) reflects the entity's capacity to generate net earnings from each unit of sales revenue produced (Dwita et al. 2022; Ella, Amalia, and Muhammad Alhada Fuadilah Habib 2022). Beyond serving as internal performance parameters, these three ratios also function as signaling instruments for market participants in evaluating the fundamental quality and long-term business sustainability prospects of corporations.

Nevertheless, the body of prior research examining the relationship between financial ratios and stock

returns continues to yield contradictory and inconsistent findings. Several studies report that asset utilization efficiency and profitability levels contribute positively to stock price movements (Laeli Choerun et al. 2021; Nathania et al. 2023; Purbawati and Suprpto 2025). However, other strands of the literature assert that these variables do not exhibit any meaningful influence (Angelene & Junita, 2022; Sayyidah et al., 2025). Furthermore, the impact of the Debt-to-Equity Ratio (DER) has also demonstrated variable outcomes, with findings pointing toward either positive or negative effects that are highly contingent upon a firm's internal characteristics and the specific industry category in which it operates (Delpania, Fitriano, and Hidayah 2023). This persistent inconsistency suggests that the relationship between fundamental performance and stock returns has yet to converge on a definitive conclusion, thereby opening substantial room for deeper investigation across different research loci.

Grounded in this exposition, the research gap addressed in this study centers on the contradictions found in prior empirical results and the still-limited body of work that simultaneously evaluates the influence of activity, solvency, and profitability ratios on stock returns, particularly within the FMCG's industry during the pandemic recovery period. Furthermore, the prevailing dominance of prior literature focused on the manufacturing and banking sectors has left the FMCG's industry relatively understudied and insufficiently explored. On these grounds, this study is designed to evaluate the fundamental

financial condition of FMCG's companies and to empirically verify the influence of Total Asset Turnover (TATO), Debt-to-Equity Ratio (DER), and Net Profit Margin (NPM) on stock returns among FMCG's sub-sector issuers listed on the Indonesia Stock Exchange over the 2021–2024 period. The findings of this study are projected to enrich the empirical literature on the nexus between financial ratios and stock returns, while simultaneously serving as a strategic reference for management practitioners and investors in identifying the key determinants of stock price movements within the FMCG's industry.

THEORETICAL FRAMEWORK

This study is anchored in the Signaling Theory advanced by Spence (1973), which posits that information disclosure by firms functions as a signal to investors regarding the performance and future prospects of the issuing company. In capital markets, financial statements serve as the primary source of fundamental information, with financial ratios acting as the principal parameters that reflect corporate performance. Indicators such as Total Asset Turnover (TATO), Debt-to-Equity Ratio (DER), and Net Profit Margin (NPM) are interpreted by investors as either favorable or unfavorable signals in the formulation of investment decisions (Anisa et al. 2022).

Total Asset Turnover (TATO) is an activity ratio that represents the effectiveness of an entity in deploying its total assets to generate sales revenue. A high TATO value signals optimal operational efficiency, which simultaneously reflects management's success in maximizing the productive utilization of all firm assets. This

efficiency is perceived as a positive signal by investors, as it indicates favorable prospects for business performance growth, which in parallel has the potential to catalyze appreciation in stock returns (Dwita et al. 2022).

The Debt-to-Equity Ratio (DER) is a solvency indicator that reflects the proportion of total liabilities relative to shareholders' equity. An elevated DER value signals substantial leverage usage, which implies a heightened degree of financial risk exposure for the entity in question. For shareholders, this phenomenon tends to trigger negative sentiment stemming from concerns over default risk, which carries the potential to dampen investment appetite and exert downward pressure on stock return performance. Notwithstanding, the impact of DER frequently yields mixed results, as in certain circumstances, debt utilization can actually stimulate improvements in corporate performance (Handayani and W 2022; Irawan 2021).

Net Profit Margin (NPM) is a profitability indicator that reflects the effectiveness of an entity in converting sales revenue into net profit. An increase in NPM signals the firm's success in mitigating operational costs and maximizing profit generation with greater efficiency. Strong profitability attainment sends a favorable signal to investors, as it communicates the prospect of dividend distributions and the stability of issuer performance — both of which contribute to strengthening the investment appeal of the firm's shares on the stock exchange (Ella et al. 2022).

Stock return is defined as the total yield received by an investor from

their placement of funds in equity instruments, comprising both capital gains derived from price appreciation and income received in the form of dividends. As articulated by Jogiyanto (2017), stock return represents the output of investment policy decisions, which is determined by the fundamental quality of the issuer and the manner in which investors appraise the associated risk and long-term business sustainability of the corporation.

A number of prior studies have demonstrated that financial ratios contribute significantly to stock return fluctuations, although these findings continue to exhibit divergence. Research conducted by Delpania (2023) confirms a positive influence of DER on stock returns, while contrasting findings presented by Handayani (2022) reveal a negative effect. Further, empirical evidence from Dwita (2022) affirms the contribution of activity ratios — particularly TATO — to stock price movements, while Nathania (2023) identifies a positive relationship between NPM and stock return attainment. Nevertheless, Angelene (2022) offers a contrasting perspective by demonstrating that NPM does not consistently produce a significant effect, particularly when confronted with specific economic fluctuations.

Drawing upon the synthesis of theoretical frameworks and empirical evidence presented above, it can be concluded that financial performance — as proxied through asset management effectiveness, debt composition, and profit margin levels — constitutes a crucial determinant of stock return attainment. Asset efficiency optimization as proxied by Total Asset

Turnover (TATO) tends to be interpreted as a positive market signal, thereby generating implications for the strengthening of stock return potential. Conversely, elevated leverage levels as proxied by the Debt-to-Equity Ratio (DER) carry the risk of amplifying a firm's financial vulnerability, which ultimately transmits an unfavorable signal to market participants. Meanwhile, profitability attainment as proxied by Net Profit Margin (NPM) reflects the entity's capability to generate net earnings, which theoretically has the capacity to reinforce corporate credibility in the eyes of investors and stimulate upward movements in stock returns.

RESEARCH METHODOLOGY

This study employs a quantitative research design using a causal approach to empirically test and evaluate cause-and-effect relationships between variables in a systematic and data-driven manner. Consistent with the framework proposed by Sugiyono (2022), this study adopts a positivist paradigm that emphasizes hypothesis validation through numerical data processing and the application of rigorous statistical analysis procedures (<https://www.leveons.id/insight/data-driven-decision-making>).

The research population encompasses all FMCG's sub-sector companies listed on the Indonesia Stock Exchange (IDX) over the 2021–2024 observation period, totaling 25 issuers. Sample selection was conducted using the purposive sampling method, with the following criteria applied: (1) consistent stock listing throughout the observation period; (2) availability of comprehensive annual financial

statements; (3) completeness of data pertaining to the variables under investigation; and (4) absence of any delisting actions affecting the sampled companies. Through this selection process, 15 companies were identified as meeting the qualification criteria, yielding a total of 60 observations for analysis.

This study utilizes secondary data collected through the documentation method, with data sources drawn from annual financial statements and stock price records officially published by the relevant authorities. In terms of variable construction, Total Asset Turnover (TATO), Debt-to-Equity Ratio (DER), and Net Profit Margin (NPM) are positioned as independent variables, while stock return is designated as the dependent variable. To optimize data quality, the independent variables were transformed into natural logarithm (Ln) form to mitigate skewness and preserve variance stability. For the dependent variable, a winsorization technique was applied to mitigate the distorting effects of extreme outliers on the analytical results.

Data analysis in this study was carried out using panel data regression, supported by the EViews software application. As explained by Damodar (2021), the integration of cross-sectional and time-series dimensions in panel data is capable of producing more precise estimates while simultaneously mitigating unobserved inter-firm heterogeneity. The analysis commences with descriptive statistical testing to profile the dataset, encompassing information on minimum and maximum values, mean, and the degree of data

dispersion as measured by standard deviation.

To determine the most appropriate estimation model, a series of specification tests were conducted, comprising the Chow Test, the Hausman Test, and the Lagrange Multiplier (LM) Test. These procedures were undertaken to evaluate the comparative suitability of three primary models — the Common Effect Model, the Fixed Effect Model, and the Random Effect Model.

The classical assumption tests applied in this study are restricted to multicollinearity and heteroscedasticity diagnostics. The multicollinearity test was employed to ensure the absence of strong linear correlation among the independent variables, while the heteroscedasticity test was performed to verify the homoscedasticity of residual variance in the regression model. In accordance with the proposition advanced by Gujarati (2021), normality and autocorrelation tests are not positioned as primary determinants in this study, given that within the framework of panel data regression, violations of these assumptions do not necessarily introduce bias into the estimators, particularly when the study is supported by a sufficiently representative sample size.

The analytical procedure in this study begins with the formulation of the panel data regression model, which is subsequently validated through goodness-of-fit testing to confirm the overall adequacy of the model. The following stage involves the estimation of the coefficient of determination (R^2) to evaluate the explanatory power of the independent variables over the

dependent variable. As a concluding step, hypothesis testing is conducted via the t-test at a significance level of 5% ($\alpha = 0.05$) to identify the statistical significance of the partial influence of each predictor variable on stock returns (Ghozali 2021).

RESULTS AND DISCUSSION

Descriptive Statistical Analysis

Descriptive statistics are employed to profile the dataset through the computation of extreme values (minimum and maximum), mean, and the degree of data dispersion as measured by standard deviation.

The results presented in Table 2 indicate that the stock return variable has a mean value of 0.398831, suggesting a positive profitability trend among the sampled companies during the observation period. Nonetheless, the recorded minimum value of -0.547222 reflects performance volatility, as a number of companies still registered negative returns. The Total Asset Turnover (TATO) variable recorded a mean of 0.286753 with a dispersion level of 0.639843, reflecting considerable heterogeneity in asset utilization efficiency across firms. Meanwhile, the Debt-to-Equity Ratio (DER) exhibits a mean of 0.600165 with a higher standard deviation of 1.518910, indicating that there are substantially contrasting capital structure policies among the sampled companies.

Additionally, the Net Profit Margin (NPM) variable recorded a mean of 1.111762 with a standard deviation of 1.298548, reflecting a fairly wide variability in the sampled companies' capacity to generate net earnings. Taken comprehensively, the magnitude of the standard deviation across all

research variables confirms the presence of significant heterogeneity among the sampled firms.

Panel Data Regression Model Selection

Based on the results of the Chow Test, the Cross-Section F probability value was 0.6934 and the Cross-Section Chi-square value was 0.4714. Given that both values exceed the significance threshold of $\alpha = 0.05$ (5%), the Common Effect Model (CEM) is deemed more appropriate for this study relative to the Fixed Effect Model (FEM).

Subsequently, the results of the Lagrange Multiplier (LM) Test indicate a Breusch-Pagan probability value for the Cross-Section component of 0.4930. Since this value exceeds the 0.05 significance threshold, it can be concluded that the Common Effect Model (CEM) demonstrates greater efficiency in estimating the research data compared to the Random Effect Model (REM). Based on both tests, it is concluded that the Common Effect Model (CEM) was selected as the most accurate and efficient panel data estimation model.

Classical Assumption Tests

The classical assumption tests applied in this study are confined to multicollinearity and heteroscedasticity diagnostics, given that the panel data regression framework provides sufficient flexibility such that normality and autocorrelation tests are not strictly required

(<https://www.leveons.id/insight/data-driven-decision-making>).

Multicollinearity Test

The results remain well below the multicollinearity threshold.

Referring to Ghozali (2021), it can be concluded that the regression model is free from multicollinearity problems.

The results presented in Table 4 reveal a significance value of 0.0077 (< 0.05), confirming the presence of heteroscedasticity in the model. This indicates that the homoscedasticity assumption is not fulfilled, as the residual variance is not constant across observations. To address this issue, the study applies the Panel EGLS (Cross-Section Weights) method through a residual variance weighting procedure. This approach yields more efficient and robust estimates in the presence of heteroscedasticity, ensuring that the regression results remain valid for interpretation and suitable for progression to the hypothesis testing stage (Ghozali 2021).

Model Goodness-of-Fit Test

The test results indicate an F-statistic probability value of 0.000089, which is statistically significant at < 0.05 . This finding confirms that the variables TATO, DER, and NPM jointly and simultaneously exert a significant influence on stock returns, thereby establishing that the regression model is fit for use in further analysis.

Partial t-Test

Based on the regression analysis, the TATO variable obtained a significance value of 0.0001. Since this figure falls below the threshold of 0.05, it can be concluded that TATO exerts a positive and significant influence on stock returns. This reflects that improvements in a firm's asset utilization efficiency directly contribute to an enhancement in stock return performance. Conversely, the Debt-to-

Equity Ratio (DER), with a p-value of 0.3429 (> 0.05), is proven to have no significant influence, indicating that capital structure composition is not a primary determinant of stock returns. Meanwhile, Net Profit Margin (NPM) demonstrates a positive and significant influence with a p-value of 0.0044, signifying that improvements in corporate profitability will effectively drive an increase in stock returns.

Coefficient of Determination (R^2)

Based on the evaluation of the coefficient of determination, an R-Square value of 0.314686 was obtained. This reflects that the combined contribution of TATO, DER, and NPM in explaining stock return fluctuations amounts to 31.47%. The remaining 68.53% is attributable to external factors outside the scope of the model, including macroeconomic conditions and firm-specific internal policies.

Discussion

The Influence of Total Asset Turnover (TATO) on Stock Returns

Based on the data analysis results, it was found that Total Asset Turnover (TATO) makes a positive and significant contribution to stock return fluctuations. This efficiency enhancement transmits a positive signal to the market, thereby stimulating increased demand for the company's shares, which in turn automatically propels return growth for shareholders. Viewed through the lens of Signaling Theory, a high TATO value functions as an informational instrument that conveys the firm's operational efficiency as a positive signal to investors. This information serves as a benchmark for investors in assessing the health of

corporate performance, which subsequently reinforces market confidence to accumulate the shares in question. The resulting demand accumulation gradually exerts upward pressure on the share price, ultimately generating more optimal returns. The findings of this study corroborate the results of research conducted by Purbawati (2025) and Laeli (2021), which empirically established the significant role of activity ratios in determining equity performance. On the other hand, these findings diverge from the conclusions of Lestari (2025), who found no significant influence of TATO on stock returns. This disparity in results suggests that the signaling strength of asset efficiency is highly contingent upon the specific characteristics of the industry sector as well as the prevailing market conditions during the observation period.

The Influence of Debt-to-Equity Ratio (DER) on Stock Returns

Based on the hypothesis testing results, it was found that the Debt-to-Equity Ratio (DER) does not exert a significant influence on stock returns. This finding indicates that a firm's capital structure composition and leverage level do not constitute a primary determinant shaping investor decision-making in the capital market. Although DER theoretically represents financial risk — whereby elevated debt levels are commonly perceived in signaling theory as a negative signal regarding solvency risk - the present findings reveal a divergent pattern. Investors tend not to treat capital structure as a primary determining variable; rather, they place greater priority on profitability indicators and a

firm's future expansion potential. The findings of this study reinforce those of Handayani (2022) and Manulang (2021), who similarly concluded that DER exerts no influence on stock returns. Conversely, these findings contrast with the work of Irawan (2021) and Delpania (2023), who documented a significant effect. This discrepancy in results underscores the fact that investors' assessment of financial risk is not static in nature but is instead highly contingent upon the economic context and the specific characteristics of the industry sector under investigation.

The Influence of Net Profit Margin (NPM) on Stock Returns

The research findings confirm that Net Profit Margin (NPM) makes a positive and significant contribution to stock return fluctuations. This result illustrates that a firm's efficiency in generating net earnings constitutes one of the critical indicators that commands primary attention from investors in the capital market.

Through the lens of Signaling Theory, the attainment of optimal profitability levels functions as a positive signal - or good news - that communicates superior performance quality and a bright long-term outlook for the firm. Investor response to such information typically manifests in the form of increased share demand volume, which ultimately triggers price appreciation and delivers higher returns.

These findings support the results of research by Nathania (2023) and Ella (2022), which confirmed a positive impact of profitability on stock returns. Nonetheless, the findings diverge from the work of Angelene

(2022) and Laeli (2021), who found no analogous effect. This disparity reaffirms that while net earnings are an indispensable indicator, their effectiveness in moving market behavior remains contingent upon external dynamics and prevailing investor sentiment fluctuations.

Research Implications

Theoretical Implications

This study reinforces the relevance of Signaling Theory in mapping the interconnection between corporate financial performance and stock return dynamics. The findings affirm that capital markets exercise selective filtering of financial information, whereby not all fundamental indicators are responded to with equal intensity - a contribution that enriches the existing literature on the effectiveness of fundamental signals in capital markets.

Practical Implications

For capital market practitioners, these findings provide guidance that asset efficiency ratios (TATO) and profitability levels (NPM) serve as more accurate predictive instruments for stock returns than capital structure composition (DER). The implication is that investors are advised to prioritize their analytical focus on an issuer's capability to convert assets into sales revenue and net earnings as the primary basis for investment decision-making.

For corporate management, the implication is the need to prioritize operational efficiency and profitability enhancement as strategic measures to strengthen investment attractiveness and reinforce the firm's valuation on the stock exchange.

CONCLUSION AND RECOMMENDATIONS

The conclusions of this study indicate that Total Asset Turnover (TATO) and Net Profit Margin (NPM) both exert a positive and significant influence on stock returns. Accordingly, the empirical test results support and accept the hypotheses formulated for both variables. These findings reflect that asset management effectiveness and an issuer's capacity to generate profitability constitute the fundamental indicators that investors prioritize when formulating their investment strategies. In contrast, the Debt-to-Equity Ratio (DER) was empirically proven to have no significant effect on stock returns, resulting in the rejection of the hypothesis pertaining to this variable. This phenomenon suggests that a firm's debt ratio does not inherently function as a determining variable for investors in evaluating equity performance. Taken simultaneously, this research model demonstrates an adequate level of fit, although the explanatory capacity of the independent variables in predicting stock return fluctuations remains moderately limited. As such, caution is warranted in generalizing these findings, particularly when applied to different industrial sectors or alternative observation periods.

Based on these conclusions, investors are advised to prioritize their analysis on operational efficiency and profitability indicators, as both factors have been empirically proven to be the primary determinants of stock return attainment. For corporate management, these findings can serve as a strategic reference for enhancing firm value through the optimization of asset utilization and the strengthening

of profitability, with the objective of increasing attractiveness to investors. It must be acknowledged, however, that this study is subject to limitations in terms of the number of variables examined and the restricted observation period, which preclude a comprehensive portrayal of the full dynamics of stock return movements. Consequently, future researchers are encouraged to expand the scope of investigation by incorporating additional variables such as macroeconomic indicators, firm size, or market-based variables. Furthermore, extending the observation period and broadening the pool of research objects are strongly recommended in order to obtain results that are more generalizable and representative of capital market dynamics.

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