



## Analysis of Market Ratios in Predicting Stock Prices Moderated by Stock Transaction Volume in Technology Companies in Indonesia

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### ABSTRACT

**Purpose** – This study aims to analyze the effect of market ratios, namely Earnings Per Share (EPS), Earnings Yield (EY), and Profit Growth, on stock prices, with stock trading volume as a moderating variable in technology sector companies listed on the Indonesia Stock Exchange (IDX) during the 2020–2024 period.

**Methodology/approach** – This study employs a quantitative approach using panel data analysis methods. The data used are secondary data obtained from companies' annual financial statements, the Indonesia Stock Exchange, and other official stock market data sources. The analytical techniques applied include descriptive statistical analysis, panel data model selection tests, panel data regression analysis, and Moderated Regression Analysis (MRA).

**Findings** – The results indicate that, partially, EPS and EY have a significant effect on stock prices, while Profit Growth does not have a significant effect on stock prices of technology sector companies. In addition, stock trading volume is able to moderate the relationship between EPS, EY, and Profit Growth and stock prices. This study demonstrates that corporate profit growth receives a stronger market response when accompanied by an increase in stock trading activity. The findings are expected to contribute academically to the development of capital market studies and to serve as a practical reference for investors and corporate management in making investment decisions

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## INTRODUCTION

The technology sector on the Indonesia Stock Exchange (IDX) has been one of the main catalysts for significant changes in the Indonesian capital market landscape during the 2020–2024 period. Accelerated digital transformation has led to an increase in technology-based business activity that has attracted a lot of investor attention, but this has been followed by a much higher level of volatility than other sectors. This volatility phenomenon is reflected in the movement of the stock price of technology companies which show sharp fluctuations, the average stock price in 2020 was at the level of IDR 1,245, then jumped dramatically to reach a peak of IDR 2,380 in 2021. However, this trend was soon followed by a sharp correction phase in 2022 to Rp1,560 and continued to Rp1,320 in 2023 before finally showing signs of stabilization at the level of Rp1,680 in 2024. These extreme fluctuations show a shift in investor expectations that are very dynamic towards the valuation of technology companies amid changing global economic conditions.

The inconsistency between stock price movements and fundamental performance is a crucial issue behind this study. Fundamentally, the company's ability to generate net profit for shareholders is reflected through Earnings Per Share (EPS). Data shows that EPS experienced a significant increase in 2021 reaching IDR 55.78 in line with market optimism, but decreased in 2022 (IDR 49.15) and 2023 (IDR 46.32) due to operational cost overruns and economic pressures. Interestingly, this movement is in line with the trend of Profit Growth which peaked at 22.4% in 2021 before slowing down to a low of 15.9% in 2023. This disconnect often creates valuation uncertainty, with the Earnings Yield (EY) indicator recording a low of 3.2% in 2021. The low EY at the peak of the stock price indicates an overvalued condition due to market euphoria that dominates the real profit consideration.

In addition to fundamental factors, market factors reflected through transaction volumes have a crucial role as an indicator of investor response to available information. The characteristics of high-risk but fast-growing technology companies cause their stock prices to be very sensitive to market liquidity. The data shows the dynamics of daily transaction volumes which are very closely related to sentiment; In 2021, the transaction volume jumped to 689.3 million shares in line with the euphoria of the technology sector IPO, but declined dramatically in 2023 to 478.6 million shares when investment interest subsided. The misalignment between financial performance (EPS, EY, Profit Growth) and stock price movements in this volatile period shows that there are other variables that are able to moderate the relationship.

Based on the empirical phenomenon for the 2020–2024 period, it can be seen that transaction volumes can strengthen or weaken the influence of fundamental performance on stock prices depending on market sentiment conditions. The 2021 period showed the dominance of transaction volumes that strengthened the price increase beyond its fundamental capacity, while the 2022-2023 period showed a correction phase as investors began to reevaluate based on more rational financial data. Therefore, the integration between fundamental financial ratios and stock transaction volume as moderation variables is very relevant to comprehensively explain stock price dynamics. This study was conducted to analyze the effect of Earnings Per Share (EPS), Earnings Yield (EY), and Profit Growth on stock prices with stock transaction volume as a moderation variable in technology sector companies listed on the Indonesia Stock Exchange.

## LITERATURE REVIEW

The first independent variable in this study is Earnings Yield (EY), which is a market ratio that reflects the rate of return on a company's profit to its stock price. EY is calculated by comparing earnings per share (EPS) to the stock price, and is often used by investors to assess whether a stock is undervalued or overvalued. The higher the value of EY, the greater the return on profit that investors receive compared to the price paid, so the stock is considered more attractive to buy. As a return-based valuation indicator, EY is considered to have better predictive accuracy than Price Earnings Ratio (PER) because it facilitates comparisons between companies and with alternative investment instruments such as interest rates. Based on the Efficient Market Hypothesis, this valuation information will soon be reflected in the stock price, where increased investor interest in stocks with high EY will drive up prices.

The second independent variable is Profit Growth, which describes the growth rate of a company's net profit from one period to the next. For companies in the technology sector, profit growth is a crucial long-term performance indicator because it reflects the company's ability to maintain innovation and competitiveness in the market. Positive growth signals a sustained improvement in performance that is able to strengthen investor confidence. In addition, this study involves Earnings per Share (EPS) as the main profitability indicator that the market pays the most attention to. EPS reflects the net profit available for each outstanding share, where a high EPS value typically correlates positively with the stock price. However, in Indonesia's technology sector, EPS often shows sharp fluctuations, such as the phenomenon of negative EPS in large companies that has a direct impact on the decline in their market value.

The stock price is positioned as a dependent variable, which is defined as the market value that the investor sets to acquire ownership rights over the company. These prices are dynamic because they reflect not only book value, but also future expectations of fundamental performance, macroeconomic conditions, as well as market psychological sentiment such as herd behavior. As a moderation variable, this study uses Stock Trading Volume which shows the number of stocks traded in a given period. Transaction volume serves as an indicator of liquidity and intensity of market activity; High volume indicates a large investor interest in a stock. In this model, transaction volume is considered to be able to influence the direction of stock price movements because it reflects how investors respond to fundamental information and important events of the company, so that it can strengthen or weaken the influence of financial performance on the company's market value.

## METHODOLOGY

This research focuses on technology sector companies listed on the Indonesia Stock Exchange (IDX) as the object of research. The selection of this sector is based on the characteristics of its active, volatile stock trading, and has a high level of volatility and transaction volume, so it is considered representative for analysis. The observation period is set for five years, starting from 2020 to 2024. Research data is collected from various official sources that are accountable, including the official website of the Indonesia Stock Exchange ([www.idx.co.id](http://www.idx.co.id)), the company's annual report, and other relevant financial portals.

The method applied is quantitative research with an associative approach. The use of quantitative methods is aimed at analyzing numerical data such as stock prices, transaction volumes, and market ratios statistically in order to test hypotheses objectively. Meanwhile, the associative approach is used to identify and measure the relationship and influence of independent variables on dependent variables, both partially and simultaneously. The data used is secondary data in the form of data panels, which integrates the cross-section (inter-

company) and time-series dimensions (2020–2024 time range). The entire data processing process was carried out using Microsoft Excel software for initial tabulation and Eviews 13 for in-depth econometric analysis to produce an accurate picture of the influence between variables.

## RESULT AND DISCUSSION

### 1. Simultaneous Effect of EPS, EY, and Profit Growth on Stock Transaction Volume

The test results show that Earnings per Share (EPS), Earnings Yield (EY), and Profit Growth simultaneously have a significant effect on the Stock Transaction Volume of technology companies on the Indonesia Stock Exchange. This is evidenced by the Prob(F-statistic) value of  $0.00002 < 0.05$ , which means that the three fundamental variables together are able to explain the variation in stock trading volume convincingly. These findings provide a strong indication that investors do not make decisions partially, but rather use a combination of fundamental information as the primary basis for determining transaction activity in the market. In the perspective of signal theory, this combined information creates a comprehensive performance signal that reflects the company's conditions as well as prospects; Positive and consistent signals will increase investor confidence and encourage trading activity. In terms of semi-strong market efficiency, the publication of this information is immediately responded to by investors through real transactions, which is in line with the findings of Nainggolan (2023) and Cahyani and Hidayah (2025) who emphasize that trading volume is an important indicator in the market's reaction to the company's fundamental information.

### 2. Direct Effect of Earnings per Share (EPS) on Stock Price

Partial testing showed that Earnings per Share (EPS) had a significant effect on the Stock Price with a probability value of  $0.0051 < 0.05$ . This figure proves that EPS is still the main indicator or *prima donna* used by investors in assessing the intrinsic value of technology companies in Indonesia. The higher the EPS value, the greater the investor confidence in the company's ability to generate net profit per share, which in turn triggers a surge in demand and an increase in market prices. Theoretically, EPS is a very strong signal because it reflects profitability directly and is concrete for shareholders. These findings strengthen the research of Jannati and Hasibuan (2025), Iswardhani (2025), and Kartini & Supriyadi (2024) who stated that EPS is the main determinant in the formation of stock prices because it transparently reflects the company's capacity to create real profits for investors.

### 3. Direct Effect of Earnings Yield (EY) on Stock Price

The Earnings Yield (EY) variable was found to have a significant effect on the Stock Price with a probability value of  $0.0032 < 0.05$ . This shows that technology investors are now starting to consider the relative valuation aspect, not just nominal profit figures. EY serves as a mirror of the rate of return on investment compared to the price paid, making it an important instrument for detecting whether a stock is undervalued or not. In the framework of signal theory, EY provides signals regarding the attractiveness of investments in terms of market price rather than profit; if EY is high, the stock is considered more attractive to value-oriented investors. These findings are in line with the argument of Nenkov and Hristozov (2024) that valuation-based fundamental ratios play a vital role in market valuation mechanisms, forcing markets to continuously integrate earnings and price information into the formation of new stock values.

### 4. Direct Effect of Profit Growth on Stock Price

In contrast to other variables, the test results show that Profit Growth independently does not have a significant effect on the Stock Price with a probability value of  $0.9875 > 0.05$ . This phenomenon indicates that historical profit growth is not a major consideration for

investors in the technology company ecosystem in Indonesia. Investors in this sector tend to have characteristics that are more focused on the prospects of innovation, business expansion, and market share control in the future rather than just looking at profit growth in the past. From a signal theory perspective, Profit Growth is considered a relatively weak signal because it does not guarantee the sustainability of performance amid the rapidly changing dynamics of the technology industry. This is in line with the research of Xiong et al. (2025) which emphasizes that in certain sectors, external factors and long-term growth potential are much more dominant in influencing price sentiment than the company's annual profit growth data.

#### 5. Stock Transaction Volume Moderates the Relationship between EPS and Stock Price

Based on the results of the Moderated Regression Analysis (MRA) test, the Stock Transaction Volume is proven to be able to moderate and strengthen the relationship between EPS and Stock Price with a probability value of  $0.0003 < 0.05$ . These findings mean that the influence of earnings information (EPS) on stock price movements will be much stronger and more effective when supported by high trading activity in the market. The volume of transactions here acts as a catalyst or signal booster; When transaction volume increases, it reflects the high confidence and collective response of investors to the company's profitability information. In a liquid market, information about rising profits will be absorbed more quickly and reflected into the rise in stock prices. These results are supported by research by Siswanti (2024) which states that market liquidity plays an important role in strengthening the relationship between a company's internal financial performance and the market value of its shares.

#### 6. Stock Transaction Volume Moderates the Relationship of Earnings Yield (EY) to Stock Price

The results of the analysis show that the Stock Transaction Volume is also able to moderate the relationship between Earnings Yield (EY) and Stock Price significantly with a probability value of  $0.0025 < 0.05$ . This confirms that the influence of valuation information on stock prices is highly dependent on the level of trading activity on the exchange. The higher the transaction volume, the faster the market responds to valuation signals sent through the EY ratio; Conversely, at low volumes, valuation information may not be optimally integrated into the stock price. Transaction volume reflects the level of confirmation from market participants on the valuation of a stock's price; if many investors are transacting, then the signal that the stock is "cheap" (based on EY) will move the price faster towards its new equilibrium value. This finding is in line with the pattern found by Ma and Yang (2023) that trading volume dynamics are able to strengthen the effectiveness of fundamental ratios in predicting stock movements.

#### 7. Stock Transaction Volume Moderates the Relationship of Profit Growth to Stock Price

A very interesting finding emerged in the moderation test of the Profit Growth variable, where the Stock Transaction Volume was able to moderate the relationship to the Stock Price with a probability of  $0.0000 < 0.05$ . Although Profit Growth does not directly have a significant effect, its influence turns out to be very strong when this variable interacts with high trading activity. This condition shows that stock transaction volume functions as a "signal enhancer" that is able to increase the relevance of profit growth information that was previously ignored by investors. When the market is active and liquid, investors become more sensitive and start paying attention to profit growth indicators as a complement to their analysis in stock price formation. This provides a new theoretical contribution that market liquidity can change the status of fundamental signals from being irrelevant to a crucial pricing factor for technology companies.

## CONCLUSION

Based on the results of data analysis and discussion on the influence of Earnings per Share (EPS), Earnings Yield (EY), and Profit Growth on Stock Price with Stock Transaction Volume as a moderation variable in technology companies in Indonesia, the following conclusions can be drawn:

**Simultaneous Influence:** Earnings per Share (EPS), Earnings Yield (EY), and Profit Growth together (simultaneously) have a significant influence on the Share Prices of technology companies in Indonesia. This shows that investors tend to look at a combination of fundamental indicators collectively in assessing stock prices in the technology sector.

**Significance of EPS:** Earnings per Share (EPS) is proven to have a significant influence directly on the Share Price. Earnings per share remain the main signal for investors in measuring the real profitability of technology companies in Indonesia.

**Significance of EY:** Earnings Yield (EY) has a significant direct effect on the Stock Price. Investors use this ratio as a valuation indicator to assess whether the current stock price is comparable to the company's ability to make a profit.

**Insignificance of Profit Growth:** Profit Growth does not have a significant effect directly on the Stock Price. This indicates that investors in the technology sector are not only looking at historical profit growth, but are more focused on future expectations of innovation and market dominance.

**EPS Moderation:** Stock Transaction Volume is able to moderate the relationship between EPS to Stock Price. High trading activity strengthens the stock price's response to published earnings information.

**EY Moderation:** Stock Transaction Volume is able to moderate the relationship between Earnings Yield (EY) to Stock Price, which means market liquidity plays an important role in integrating valuation information into price movements.

**Moderation of Profit Growth:** Interestingly, although it has no direct effect, Stock Transaction Volume is able to moderate the relationship between Profit Growth and Stock Price. This proves that new profit growth information will be responded to by the stock price if supported by active trading volume (market liquidity).

## Suggestions

Based on the above conclusions, the author formulates several strategic suggestions as follows:

### Theoretical Suggestions

Given that Profit Growth is only conditionally affected through the moderation variable, further research is recommended to develop an analysis model that is more specific to the characteristics of the technology sector. The addition of variables such as investor sentiment, market volatility, systematic risk (beta), and macroeconomic factors is highly recommended. In addition, it is necessary to consider the use of non-profit growth performance variables such as revenue growth or innovation metrics to capture stock price dynamics more accurately.

### Practical Advice

For Companies: The management of technology companies must consistently maintain the quality of profits (EPS and EY), considering that both are the main magnets for investors. In addition, companies need to actively increase stock liquidity through transparency of financial statements and intensive investor communication (such as public exposures) to strengthen the market response to the company's performance.

For Investors: Market participants are advised to prioritize EPS and EY as the primary filters in fundamental analysis. However, investors should also be aware of Stock Transaction Volume; Good fundamental information may not move the price optimally if it is not accompanied by sufficient trading liquidity.

Academic Advice and Further Research

Extended Period: Using longer observation time spans to capture the phenomenon of a rapidly changing technology market cycle.

Sample Expansion: Expand the number of company samples or include a comparison sector (such as the financial or manufacturing sector) to obtain more generalizable results.

Methodological Variation: Apply methods that capture non-linear or complex relationships, such as dynamic panels or lag models, to better understand moderation behavior.

Exploration of New Variables: Examine other fundamental variables that are more relevant to the technology business model, such as cash flow, revenue growth, or other technology-specific valuation ratios.

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