IS MARKET TREND AND SENTIMENT AFFECTED STOCK PRICE? EVIDENCE FROM ENERGY SECTOR IN INDONESIA

Ayunda Rizqi Oktaviana[1]
Universitas Airlangga, Surabaya, Indonesia
ayunda.rizqi-2023@feb.unair.ac.id

Anak Agung Gde Satia Utama[2]
Universitas Airlangga, Surabaya, Indonesia
gde.agung@feb.unair.ac.id

Abstract

This study investigates the relationship between market trends, market sentiment, and stock prices within the energy sector listed on the Indonesia Stock Exchange (IDX). Grounded in behavioral finance theory which emphasizes the influence of psychological and behavioral factors on financial decision-making this research evaluates how fluctuations in public interest and investor sentiment affect stock price dynamics. The study utilizes secondary data extracted from company annual reports, stock price records, and publicly available financial statements covering the period from 2014 to 2023. The sample includes 22 energy sector companies, selected through purposive sampling based on predefined criteria. To measure market trends, the study employs Google Trends scores, while social media sentiment analysis—using Brandwatch—captures investor sentiment. The regression analysis investigates the influence of both variables on stock prices, incorporating control variables such as company size, debt-to-equity ratio, and dividend payout ratio. The empirical findings reveal that both market trends and investor sentiment exert a significant and positive influence on stock prices in the Indonesian energy sector. The implications of these findings extend to several domains. Investors can integrate trend and sentiment indicators into their analytical frameworks to improve decision-making and anticipate stock movements more effectively. Financial analysts and advisors can adopt these behavioral metrics as complementary tools alongside traditional valuation methods.

Keywords: Market Trend and Sentiment Affected Stock Price, Energy Sector in Indonesia

INTRODUCTION

The energy sector in Indonesia is a vital and strategic component of the national economy (Olivia & Gibson, 2008). Indonesia brags plenty of natural resources like oil, natural gas, and coal, essential contributors to the country's revenue and an influential generator of foreign exchange (Widya Yudha & Tjahjono, 2019). Furthermore, the energy sector is crucial in catering to the escalating domestic energy demands of economic and population growth (Horobet et al., 2019). Contemporary endeavors by the Indonesian government have concentrated on strengthening the energy sector through initiatives such as boosting investments in renewable energy and expanding energy infrastructure (Monirul Islam et al., 2023). These endeavors aim to reduce dependency on fossil fuels and attain sustainable long-term energy practices. The energy industry in Indonesia encounters various difficulties, including transitions in worldwide commodity prices, alterations in regulations, and market trends affected by external aspects (Raihan et al., 2023). Consequently, the stock prices of energy sector firms are significantly affected by a range of factors that mirror the fundamental circumstances of the company (Horobet et al., 2019).

Stock price trends serve as vital navigational markers within financial markets, capturing the attention of investors, analysts, and policymakers and also the primary metric used to determine a company's market value within the stock exchange (Chen et al., 2019; Omar et al, 2025). Not only does the stock price affect how investors assess the company's value, but it also serves as a vital quotation of information for various stakeholders, such as the company's management, employees, and regulators (Xie et al., 2022). A high stock price can indicate positive company performance and prospects, strengthening investor confidence and the company's potential access to financial resources (Wen et al., 2019). However, it's essential to recognize that stock prices are not static; they fluctuate in response to various factors, with market trends playing a significant role in shaping these movements (Zhong et al., 2024). Understanding the interplay between stock prices and market trends is essential for investors and financial analysts, as it provides insights into market sentiment, company performance, and broader economic conditions (Chung & Chang, 2024). By analyzing these dynamics, stakeholders can make more informed investment decisions and anticipate market movements more effectively (Qian & Tan, 2024). Favorable market trends, which reflect investor optimism and market confidence, typically result in an overall increase in stock prices (Leonardo et al., 2022). Conversely, negative market trends can lower the stock prices of even fundamentally sound companies. Hence, comprehending and evaluating market trends is vital for investors and other stakeholders to make informed investment choices and devise effective business strategies (Yilmaz et al., 2022).

According to the Behavioral Financial Theory, stock prices are often driven by market trends, which reflect how investors collectively respond to information and occasions in financial markets (Bashir, 2024). Favorable market trends, characterized by optimism and enthusiasm, typically increase stock prices as investor buying interest rises (Fu, 2021). Contrariwise, negative market trends can drive stock prices to descend as investors sell shares uncertainly. Research indicates that robust market trends play a significant role in shaping stock prices, with sudden shifts in market sentiment capable of eliciting substantial reactions in a company's stock value (Chiang & Tsai, 2023). Understanding and analyzing market trends is crucial for making informed investment decisions and adapting to the dynamic nature of financial markets. Previous studies have highlighted the substantial impact of market trends on stock price movements, underscoring their role as primary catalysts for market fluctuations (Li et al., 2020). A positive market trend will likely strengthen investor confidence and lead to an overall uptick in stock prices. In disparity, a negative trend can infuse market apprehension and trigger a widespread drop in stock prices (Jing et al., 2021).

Previous studies have delved into the correlation between market sentiment and stock price, indicating that market sentiment significantly influences stock price fluctuations (Ahmed, 2020). Several research efforts indicate that a positive market sentiment commonly provides advancement to an upward trend in stock prices (Li, 2020). In contrast, negative sentiment is often associated with a decline in stock values. Nevertheless, these investigations have mainly focused on well-established financial markets like the United States, escaping an evident gap in the literature concerning emerging markets such as the Indonesian stock market. Furthermore, past studies have leaned heavily on traditional methods to measure market sentiment, including news analysis and surveys of investors, neglecting the potential insights offered by modern information technology advancements (Zhu & Niu, 2016). These advancements encompass various sources, such as Google Trends search data and sentiment analysis on social media platforms.

This study makes several contributions to enhancing comprehension of the dynamics of the Indonesian stock market and the variables impacting stock prices. Initially, the research seeks to introduce novel perspectives on the correlation between market sentiment, gauged through Google Trends and sentiment analysis on social media, and firms' stock prices in Indonesia's energy sector. Through the utilization of freshly generated data from the realm of information technology, the investigation has the potential to offer a more profound insight into how investor actions and market sentiments can sway stock price fluctuations. Furthermore, the study carries crucial practical implications for stakeholders, including investors, financial analysts, and policymakers, by furnishing them with more precise and intricate details regarding the determinants that sway stock prices. By attaining a superior comprehension of market sentiment, these stakeholders can enhance their investment decision-making processes and foresee market trends with greater accuracy. Consequently, the study will enhance the effectiveness of Indonesia's stock market and yield a positive impact on the advancement of the nation's capital markets. This paper aims to investigate the relationship between market sentiment, as measured by Google Trends and social media sentiment analysis, and stock prices of energy sector companies listed on the Indonesia Stock Exchange (IDX). Additionally, the research aims to fill the gap in existing literature by exploring the role of market sentiment in a developing market context, specifically focusing on the energy sector in Indonesia. Through this investigation, the paper aims to provide valuable insights for investors, financial analysts, policymakers, and other stakeholders, ultimately contributing to more informed decision-making processes in the Indonesian stock market.

REVIEW OF LITERATURE

Market Trend

Behavioral finance theory explores the extent to which psychological factors and cognitive biases shape individual and collective financial decision-making, particularly in the context of stock market investments. Rather than consistently acting in accordance with rational models, investors frequently allow emotions, perceptions, and heuristics to influence their investment decisions. This framework posits that market trends emerge not solely from underlying fundamentals but from aggregated investor sentiment and behavior. When investor sentiment aligns with optimistic expectations, markets typically experience upward momentum, as investors willingly purchase assets at premium prices. Conversely, during periods of pessimism or uncertainty, collective sentiment often triggers widespread sell-offs, thereby inducing notable price declines. Kahneman and Tversky (1979) demonstrated that emotional responses to specific market events often prompt investors to behave irrationally, leading to abrupt and substantial fluctuations in asset prices. Their findings reinforce the theoretical proposition that investor sentiment plays a critical role in amplifying market volatility. In this context, market trends function not only as economic indicators but also as psychological signals that investors interpret emotionally, particularly in the face of abrupt market shifts. Chung and Chang (2024) empirically investigated herding behavior among investors and revealed that many individuals align their investment actions with prevailing market sentiment. Their results confirm that bullish trends often catalyze heightened buying activity, which collectively elevates share prices. On the contrary, bearish trends frequently induce panic selling, further exacerbating downward price pressures.

Recent empirical studies also support the context-dependency of herding behavior. Wibowo (2025), using the CSSD and CSAD methods on LQ45 index data, found no statistically significant evidence of herding, indicating rational investor behavior in normal market conditions. However, Handayani and Atikah (2024) identified that larger firms exhibited lower levels of herding, suggesting that firm size influences the likelihood of sentiment-driven trading. Similarly, Viona et al. (2023) observed sporadic herding patterns during the COVID-19 pandemic, especially in sectors exposed to higher uncertainty, illustrating that herding behavior intensifies under stress. In a related study, Puspaningrum and Isnawati (2024) established that herding behavior tends to escalate during crisis periods, particularly among small-cap firms that often attract sentiment-driven speculation. These findings support the core tenet of behavioral finance: in the absence of robust fundamental signals, investors tend to imitate collective market behavior, relying on peer cues and psychological heuristics rather than objective valuation metrics. Altogether, these insights demonstrate that market trends represent more than macroeconomic fundamentals; they encapsulate investor sentiment and behavioral dynamics that can significantly influence price formation. Recognizing these behavioral drivers enables analysts, investors, and policymakers to more accurately interpret market movements and anticipate episodes of volatility driven by shifts in collective psychology.

H1: Market trend has an effect on stock price

Market Sentiment

Investor sentiment reflects the aggregate perceptions, attitudes, and expectations of market participants and plays an integral role in shaping asset pricing within financial markets. Baker and Wurgler (2007) emphasized that sentiment, conveyed through news outlets and digital platforms, significantly influences market valuation by triggering shifts in investor behavior. Their findings illustrate that investors frequently respond emotionally to market-related stimuli, which often results in pronounced price fluctuations. Barber and Odean (2008) extended this insight by demonstrating a strong link between market sentiment and herd behavior, revealing that investors tend to imitate the prevailing actions of the majority when making trading decisions. Kahneman and Tversky (1979) also contributed foundational insights, showing that emotions and heuristics exert a substantial influence over financial decision-making. Their research confirmed that cognitive biases and emotional reactions drive investor behavior, particularly during periods of market uncertainty, thereby amplifying stock price volatility. These findings collectively validate the central claims of behavioral finance theory, which posits that psychological and behavioral factors consistently mediate financial choices, especially in equity markets.

In emerging economies such as Indonesia, where information asymmetry and structural inefficiencies persist, investor sentiment assumes an even more critical role in explaining price volatility. Zainul and Fachrudin (2025) demonstrated that sentiment significantly moderates the relationship between profitability and stock returns, implying that irrational reactions can either amplify or suppress the predictive power of fundamental valuation models. Wibowo (2025) further noted that although sentiment in the Indonesian market does not always correspond with pricing anomalies, it continues to influence stock price dynamics when disseminated through mainstream media and social networks. Tran et al. (2024), in a regional analysis across Asia–Pacific markets including Indonesia, found that heightened sentiment when measured through Google Trends or media buzz—correlates strongly with stock price crash risk. Their evidence indicates that excessive optimism or panic, driven by emotionally charged narratives, can destabilize markets. Similarly, Fitrani and Permana (2023) analyzed investor behavior during the COVID-19 pandemic and discovered that sentiment-driven reactions to public health information significantly impacted stock performance. Social media, in particular, amplified these effects by accelerating the dissemination of emotional narratives and speculative commentary. Collectively, these empirical findings underscore the necessity of integrating sentiment indicators into asset pricing models, portfolio management strategies, and regulatory risk assessments. By quantifying and monitoring sentiment signals, investors and policymakers can develop more responsive tools to anticipate market turbulence and construct adaptive investment frameworks in sentiment-sensitive sectors such as energy and finance.

H2: Market Sentiment has an effect on stock price

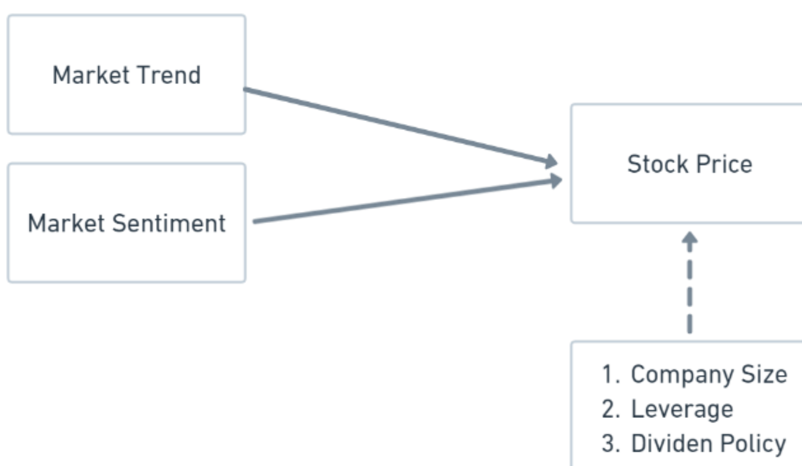

Figure 1.
Research Framework

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RESEARCH METHOD

The sample in this study consists of energy sector companies listed on the Indonesia Stock Exchange (IDX) from 2014 to 2023. The energy sector is chosen due to its sensitivity to market sentiment and significant impact on the Indonesian economy. The data used in this study is secondary data obtained from the company's annual reports, stock price records, and publicly available financial statements. The sample was collected using a purposive sampling technique based on specific criteria, excluding companies that did not have complete data during the study period. This study’s sample size consists of 22 companies from 2014 to 2023.

The dependent variable in this study is the stock price of energy sector companies listed on the Indonesia Stock Exchange (IDX). Stock price data is collected monthly and represents the closing price at the end of each month (Wah & Qian, n.d.). The stock price is a crucial indicator of a company's market value and echoes the market's perception of the company's performance and prospects. Observing stock price movements helps investors estimate the fitness of their investments and construct informed decisions. The independent variable in this study is the Google Trends Score, which measures the relative popularity of search queries related to energy sector companies over time. Google Trends provides an index of the volume of searches for specific terms, scaled from 0 to 100, where 100 represents the peak popularity of a term (Phuong, 2021) and The Social Media Sentiment Score is derived from analyzing social media posts related to energy sector companies. This score indicates real-time investor sentiment and public perception, reflecting how discussions and opinions on social media platforms. The data for social media sentiment analysis is collected using Brand watch, a social media analytics tool. This score is used as a proxy for market sentiment, reflecting public interest and attention towards the companies in the energy sector.

The study employs multiple linear regression analysis to examine the impact of market sentiment on stock prices in the energy sector. The regression model is specified as follows:

$$SP_{i,t} = \alpha + \beta 1Gtrend_{i,t} + \beta 2SentScore_{i,t} + \beta 3SIZE_{i,t} + \beta 4DER_{i,t} + \beta 3DIV_{i,t} + \epsilon_{i,t} \quad (1)$$

$$\text{Sentiment Score} = \frac{\sum Number\ of\ Positive\ News - \sum Number\ of\ Negative\ News}{\sum Number\ of\ News} \quad (2)$$

Table 1.
Variable measurements

Variable	Proxy	Measurement
Dependent Variable		
Stock Price	SP	Stock price monthly and the closing price at the end of each month (Wah & Qian, n.d.)
Independent Variable		
Google Trend Score	Gtrend	Measured an index of the volume of searches for

		specific terms, scaled from 0 to 100 (Phuong, 2021)
Social Media Sentiment	SentScore	Measured by the Number of sentiment positive and negative divided by total number of post (Phuong, 2021)
Control Variable		
Company Size	SIZE	Measured by the natural logarithm of total assets (Hart & Oulton, 1996).
Debt-to-Equity Ratio	DER	Measured as the ratio of total debt to total equity (Auerbach & King, n.d.).
Dividend Policy	DIV	Measured by the dividend payout ratio (Herwartz et al., 2016).

RESULTS AND DISCUSSION

Based on the findings in Table 2, energy sector companies' stock price (SP) has an average value of 0.2414, indicating a substantial range between the minimum of 0.0042 and the maximum of 0.3414. Despite a relatively low standard deviation of 0.0414, the broad spectrum of values signifies notable disparities in stock prices among companies within the sector. Additionally, the average market trend (Gtrend) stands at 0.3712, revealing significant variability from a minimum of 0.0539 to a maximum of 0.6632. The high standard deviation of 0.2788 suggests substantial fluctuations in public interest in the energy industry. Furthermore, the average market sentiment (SentScore) is calculated at 0.1193, with a notable range from 0.0799 to 0.2932. A relatively high standard deviation of 0.1882 indicates fluctuations in investor perception and sentiment towards the respective companies. The average size of the companies (SIZE) in the sector is determined to be 0.4127, with variations spanning from a minimum of 0.2567 to a maximum of 0.8. The comparatively low standard deviation of 0.1167 implies a tendency for the company sizes to remain stable.

Moreover, the average debt-to-equity ratio (DER) is 0.8230, showcasing a significant range from a minimum of 0.0015 to a maximum of 7.7832. The high standard deviation of 1.7652 indicates noteworthy diversity in the capital structures of energy sector companies. Lastly, dividend payments (DIV) exhibit an average of 0.8632, with variations between a minimum of 0 and a maximum of 0.9890. A relatively high standard deviation of 0.3421 highlights disparities in dividend distribution policies across different companies.

Table 2.
Descriptive Statistics

Variable	Mean	Min	Max	Std. Dev
SP	0,2414	0,0042	0,3414	0,0414
Gtrend	0,3712	0,0539	0,6632	0,2788
SentScore	0,1193	0,0799	0,2932	0,1882
SIZE	0,4127	0,2567	0,8	0,1167

DER	0,8230	0,0015	7,7832	1,7652
DIV	0,8632	0	0,9890	0,3421

Notes: SP= Stock Price; Gtrend= Market Trend; Sentscore= Market Sentiment; SIZE= Company Size; DER= Debt to Equity Ratio; DIV= Dividen

The regression results in the table below indicate that the market trend variable (GTrend) is associated with a positive coefficient value of 0.045 and a t-statistic of 3.975, signifying a notable significance level at the 1% confidence level. This suggests that market trends, as measured by Google Trends, substantially positively impact the stock price (SP) of establishments operating within the energy sector in Indonesia. These conclusions align with prior studies that have established a relationship between stock price and market trends reflected by the public's interest in a specific industry or sector (Chiang & Tsai, 2023). This study revealed that variations in public interest, as evidenced by online searches, can be early indicators of upcoming alterations in stock prices.

Table 3.
Regression Result

Variable	**Sign**	**Coef.**	**T-stat**
Stock Price	SP	1.532	**1.812****
Market Tred	GTrend	0.045	**3.975*****
Market Sentiment	SentScore	6.904	**2.097****
Company Size	SIZE	-5.732	**-5.018*****
Leverage	DER	-4.128	**-3.276*****
Dividen Payout	DIV	0.472	0.214
Adj. R Square			*0.217*
F-statistic			*8.213*
Prob (F-statistic)			*0.000*

Note: *,**,*** indicates the significance level at 0.01, 0.05, and 0.10

The regression analysis confirms that multiple variables significantly affect stock prices among energy sector firms in Indonesia. The results demonstrate that both market sentiment and market trends exert a statistically significant and positive influence on stock price performance. Specifically, the market sentiment variable (SentScore) produces a coefficient of 6.904 with a t-statistic of 2.097 at a 5% confidence level, indicating that shifts in investor sentiment measured through social media sentiment analysis—strongly influence stock price movements. This result aligns with the findings of Mokhtari et al. (2023), who established that Twitter sentiment correlates positively with stock returns and effectively predicts market dynamics. Their study underscores the powerful role of collective investor psychology, particularly when disseminated through digital platforms. In parallel, the market trend variable (GTrend) demonstrates a coefficient of 0.045 and a t-statistic of 3.975, indicating significance at the 1% level. This outcome reinforces the assertion that increased public attention, as reflected in Google search behavior, corresponds with rising stock valuations. Orăștean et al. (2024) support this evidence by highlighting that higher search volume indices indicate greater investor interest, which translates into upward price pressure in financial markets. These results collectively validate the importance of incorporating behavioral indicators such as online search activity and digital sentiment metrics—into stock valuation models and investment decision frameworks.

In contrast, the coefficient for company size (SIZE) exhibits a negative and significant relationship with stock prices. This suggests that firms with larger asset bases tend to experience diminished market valuations, potentially due to perceptions of lower growth potential compared to smaller, more agile companies. Although this finding contradicts classical valuation theories that associate firm size with stability and strong fundamentals, Nafisah and Bawono (2024) noted similar patterns, emphasizing the contextual nature of investor preferences in emerging markets. The debt-to-equity ratio (DER) also yields a negative and significant association with stock prices, reflecting investor aversion to high leverage. Firms with elevated debt levels often face skepticism from investors due to perceived financial fragility. This result aligns with the pecking order theory, which suggests that market participants interpret rising debt levels as a signal of constrained internal financing. Endri et al. (2023) provide empirical support for this perspective, confirming that leverage inversely affects firm valuation in the Indonesian capital market. The dividend payout ratio (DIV), however, does not exhibit a statistically significant effect on stock prices in this model. This indicates that dividend distribution policy may hold less relevance for investor decision-making in the energy sector. Such a finding challenges the assumptions of dividend signaling theory, which posits that consistent or increasing dividends reflect management's confidence in the firm's future prospects. Nonetheless, Vinatra and Nirawati (2024) argue that dividend signals remain context-sensitive and may carry more weight in mature markets than in growth-oriented sectors like energy in Indonesia.

Overall, the analysis emphasizes the critical influence of behavioral variables particularly investor sentiment and public attention on stock valuation in the energy sector. It also reveals complex and sometimes counterintuitive relationships between traditional financial indicators (such as firm size and leverage) and market outcomes. These insights highlight the necessity of integrating both quantitative fundamentals and behavioral dimensions into comprehensive investment models and policy evaluations.

CONCLUSION

This study provides essential insights for multiple stakeholders within the financial industry. The empirical analysis confirms that both market trends captured through Google Trends and market sentiment extracted from social media data significantly and positively influence stock prices in Indonesia's energy sector. The regression results show that the market trend variable (GTrend) holds a coefficient of 0.045 ($t = 3.975$, $p < 0.01$), while the market sentiment score (SentScore) demonstrates a coefficient of 6.904 ($t = 2.097$, $p < 0.05$). These values indicate that heightened public interest and optimistic investor sentiment tend to elevate stock valuations. Investors can enhance their decision-making processes by integrating digital sentiment indicators and search trend analytics into their investment strategies. These indicators serve as early signals of stock price fluctuations, particularly in sectors that remain highly responsive to public opinion. Financial advisors can apply these findings to deliver more nuanced and behaviorally-informed recommendations to clients by combining conventional financial assessments with behavioral signals. Policymakers and regulatory bodies can also leverage these insights to construct adaptive policy frameworks that promote market confidence and resilience. By observing spikes in digital attention or abrupt shifts in sentiment, regulators can better anticipate market anomalies, such as speculative bubbles or sudden price corrections, and respond accordingly.

Although this research contributes to understanding behavioral influences in stock price dynamics, it presents several directions for future investigation. Researchers should consider including macroeconomic indicators (e.g., inflation, interest rates) and industry-specific drivers (e.g., energy regulations or commodity price shocks) to enhance explanatory power. Further studies should also examine whether these behavioral effects extend across other industries or geographic regions, thus improving the external validity of the findings. Longitudinal analyses may uncover temporal causality and evolving investor patterns that a cross-sectional approach cannot detect. Moreover, comparative research between emerging and developed markets may reveal whether digital sentiment exerts similar effects across distinct market structures. For instance, investors in developed financial systems may interpret and react to digital signals differently from their counterparts in emerging economies such as Indonesia. Nonetheless, this study presents certain limitations that warrant acknowledgment. First, the dataset comprises secondary data drawn from publicly available platforms, which may contain inherent biases and limited granularity. Second, the exclusive focus on Indonesia's energy sector constrains the generalizability of the findings. Third, the cross-sectional design precludes the identification of causal relationships. Lastly, although digital sentiment indicators offer valuable behavioral insights, researchers must interpret them cautiously due to variations in language, cultural context, and platform-specific dynamics. These limitations suggest the need for further methodological refinement and broader empirical validation in future studies.

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