Google Trends Analysis on Investor Sentiment on Stock Return Jakarta Islamic Index

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Abstract
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Investor sentiment arises when there is an event or event that affects people's lives such as pandemics, terrorism, wars, and economic conditions. The Covid 19 pandemic is an outbreak that has emerged and its spread is very fast around the world, so it requires people to stay at home to reduce the rate of transmission. This research was conducted to find out the positive and negative sentiment of investors towards the return of Jakarta Islamic Index shares. Positive and negative sentiment is induced from medical terms that appear on the google trends page. The method carried out is to use quantitative with a descriptive approach. The results obtained in this study are that investor sentiment, both positive and negative, partially and simultaneously has a significant positive effect on stock returns on the Jakarta Islamic Index. This shows that if there is a trust issue that is happening such as Covid-19, war, data breaches, it can make investor sentiment change in choosing companies that issue stocks with data evidence taken from Google Trends to analyze the popularity of queries with keywords entered into search engines.

Analisis Google Trends tentang Sentimen Investor terhadap Stock Return Jakarta Islamic Index

Abstrak
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Sentimen investor muncul ketika ada peristiwa atau peristiwa yang mempengaruhi kehidupan masyarakat seperti pandemi, terorisme, perang, dan kondisi ekonomi. Pandemi Covid 19 merupakan wabah yang muncul dan penyebarannya sangat cepat di seluruh dunia, sehingga mengharuskan masyarakat untuk tinggal di rumah untuk mengurangi laju penularan. Penelitian ini dilakukan untuk mengetahui sentimen positif dan negatif investor terhadap kembalinya saham Indeks Syariah Jakarta. Sentimen positif dan negatif diinduksi dari istilah medis yang muncul di halaman google trends. Metode yang dilakukan adalah dengan menggunakan kuantitatif dengan pendekatan deskriptif. Hasil yang diperoleh dalam penelitian ini adalah sentimen investor, baik positif maupun negatif, sebagian dan bersamaan memiliki efek positif yang signifikan terhadap imbal hasil saham pada Indeks Syariah Jakarta. Hal ini menunjukkan bahwa jika ada masalah kepercayaan yang terjadi seperti covid-19, perang, pelanggaran data, hal itu dapat membuat sentimen investor berubah dalam memilih perusahaan. Hal ini menunjukkan bahwa jika ada isu kepercayaan yang terjadi seperti Covid-19, perang, pelanggaran data, hal itu dapat membuat sentimen investor berubah dalam memilih perusahaan yang menerbitkan saham dengan bukti data yang diambil dari Google Trends untuk menganalisis popularitas kueri dengan kata kunci yang dimasukkan ke mesin pencari.

Various problems and hot issues are easy for us to know from the internet media. These various problems can be searched, obtained and presented in big data (Purnaningrum & Ariqoh, 2019). According to Shu (2016), big data can store large volumes of data and increase very quickly. Companies can do marketing through online media by using search engines to determine the best advertising platform (Blazquez & Domenech, 2018). Using data from the search feature on the internet can provide information you want to know until a solution can solve it. A search index measures Internet search frequency, including a given word or set of words (Mellon, 2014). Information that can be accessed quickly can make people directly respond to events that occur so that they enter the trending topic. The trending discussion on social media affects social life, which will affect capital market movements, especially in the great lockdown conditions (Widjayanti et al., 2022).

COVID-19 is a pandemic era throughout the earth. At the beginning of the emergence of the COVID-19 pandemic, it immediately shocked the world and affected all sectors (Hidayat et al., 2021). Ding et al., (2020) explained that many large businesses have reported bankruptcy due to COVID-19. Jiang et al., (2021) prove that during the COVID-19 pandemic, investors always look for stock information through various platforms to determine investment decisions. However, in the longer term, COVID-19 will positively influence the capital market (Hidayat et al., 2021). It happens because of adjustments in income without face-to-face interaction era, so many Indonesians choose to invest their money in the capital market (Hidayat et al., 2021). The increase in trading volume and IHSG can represent an increase in stock market performance. The research results owned by Hidayat et al., (2021) stated that the spread of COVID-19 cases significantly positively affected IHSG performance (Alfira et al., 2021). Meanwhile,

research by Kusuma & Setiyono, (2021) states that COVID-19 does not affect IHSG performance.

Investor sentiment can be defined as investor optimism or pessimism on future stock market activity (Baker & Wurgler, 2007). When investors make a decision, their sentiment, or state of mind, influences a decision (Blajer-Gołębiewska et al., 2018). It is the way investors form trusts (Barberis et al., 1998). Jakarta Islamic Index (JII) is one of the sharia stock indices consisting of 30 of the most liquid sharia stocks listed on BER. JII recorded an improved performance during the pandemic even better than before the pandemic (Pertiwi et al., 2022).

Google Trends, known as GT, is an internet-based application that provides up-to-date reports related to searches on keywords with historical searches. It includes reports related to requests for information on a particular topic from time to time that detect the latest news, information needed, and phenomena that worry the community (Blazquez & Domenech, 2018). Research by Preis et al., (2013) shows that Google trends data not only reflects aspects of the current state of the economy but can also provide insight into the future. In this study, researchers detected a spike in search volume related to the capital market before the stock market crash. These results prove that search volume on the Google Trend application can provide signals for people to make transactions in the capital market. Huang et al., (2020) said that Google trends can be used to build models and forecast stock price index movements. This study used a simple linear model. The study's conclusion shows that search data on Google Search can be used to see signals of stock price movements based on circumstances or a positive and negative phenomenon. With Google Trends, data related to market signals can be a concern for investors.

Research on the influence of market sentiment on stock returns shows different

results. mentioned that there is no influence on investor sentiment on stock returns. Pertiwi et al., (2022) mentioned that during the pandemic, investor sentiment negatively affected stock returns because investors made stock withdrawals to avoid greater losses. The results of this study show that investors are pessimistic about the company's condition, so investors sell shares, which impacts the decline in stock prices.

Unlike these two studies, Jiang et al., (2021) prove that during the COVID-19 pandemic, investors always look for stock information through various platforms to determine investment decisions. The high disbursement of this information indicates investor sentiment due to the Covid-19 pandemic. The results show that investors tend to increase trading volume to avoid the risk of saving certain companies' investments in the short term. An increase in trading volume leads to fluctuations in stock returns. Fadhillah & Faisal, (2017) show that investor sentiment positively affects stock returns. This influence indicates that investor behaviour in Indonesia is rational because it considers various information in making short-term and long-term investment decisions (Fadhel et al., 2022). The variables used in this study consist of independent variables of positive and negative sentiment of investors, while the dependent variable is the Stock Return Jakarta Islamic Index. The hypotheses obtained from this study are:

H1: Negative investor sentiment has a significant positive effect on the stock return of the Jakarta Islamic Index
H2: Positive investor sentiment has a significant positive effect on the stock return of the Jakarta Islamic Index
H3: Positive and negative investor sentiment has a significant positive effect on the stock return of the Jakarta Islamic Index

METHODS

The method used in this study is a quantitative method with a descriptive approach. The population of this study is all metadata of words related to Covid 19, including positive sentiment and negative sentiment on Google trends and stock return statistical data from the Jakarta Islamic Index (JII). The sampling technique in this study uses non-probability sampling techniques with purposive sampling methods. The two bases for sample selection are 1) word searches related to positive and negative sentiments according to previous research and 2) Taken in high season of COVID-19 from January 2020 to December 2022. Words often searched on Google trends related to COVID-19 are divided into two categories: positive and negative (Anastasiou et al., 2022; Kholilah et al., 2023). Positive sentiment comprises 25 words related to vaccines, and negative sentiment uses 75 words related to COVID-19 (Anastasiou et al., 2022; Kholilah et al., 2023). The data used in this study are secondary is word search results in GT and stock return (Kholilah et al., 2023) obtained with the following calculations:

$$\text{Stock Return} = \frac{\text{JSX ISLAMIC INDEX t} - \text{JSX ISLAMIC INDEX t}-1}{\text{JSX ISLAMIC INDEX t}} \dots(1)$$

RESULT & DISCUSSION

Based on the results of descriptive statistics from 163 data obtained through data collection for 163 weeks, the average value of the negative sentiment variable and positive sentiment is the same value, which is 0.006. So, it can be said that the average number of searches for negative sentiment and positive sentiment keywords each week compared to the total number of searches over 163 weeks is 0.60%. Furthermore, the maximum value for the negative sentiment variable is 0.015, which means that the average maximum number of searches each week is compared to the overall number of searches over 163 weeks, which is 1.50%. The maximum value of positive sentiment keyword searches is greater compared to negative sentiment keyword searches, which is 2.41%. So, for 163 weeks, starting from the first week of

2020 to the sixth week of 2023, searches on Google Trends were most often based on the variable keyword positive sentiment.

Table 1. Descriptive Statistics

Variable	N	Mean	Std. Deviation
Negative Sentiment	163	0.0061	0.0027
Positive Sentiment	163	0.0061	0.0057
stock_return	163	-0.0008	0.0255

Source: Data Proceed (2023)

Descriptive data for the stock return variable obtained an average value of -0.008, which means that the average return that investors will receive in Jakarta Islamic Index shares for 163 weeks is -0.08%. The maximum value is 0.110, which means that the largest return that investors will receive over 163 weeks is 11%.

Table 2. Multiple Linear Regression Analysis

	B	Std. Error	t	Sig.
(Constant)	0.005	0.000	74.884	0.000
Negative Sentiment	-1.491	0.013	-114.054	0.000
Positive Sentiment	0.504	0.012	41.363	0.000

Source: Data Proceed (2023)

From the regression model, the regression results can be explained as follows:

a = constant value of 0.005. It means that if the variables negative sentiment (X1) and positive sentiment (X2) are constant, then the stock return (Y) will be positive.

b1 = regression coefficient of negative sentiment variable (X1) with a value of -1.491 (negative), it is concluded that if the negative sentiment variable increases, then the stock return variable decreases, assuming the variable X2 is constant

b2 = coefficient of positive sentiment variable (X2) with 0.504 (positive), it is concluded that if the positive sentiment variable increases, then the stock return variable also increases, assuming the variable X1 is constant.

In the Model Summary table, the R-value (Pearson correlation) is shown at 0.998, meaning there is a very strong relationship between research variables, which is 99.8%. R-square value (koef. Determination) 0.996, which means the

independent variables used in this study, namely negative sentiment and positive sentiment, can explain the stock return variable (Dependent) before 99.6%. In comparison, the other 0.4% is explained by other variables or factors not included in this study.

H1: That negative sentiment has a significant effect on stock return

If the Sig. The hypothesis is accepted if the value is less than 0.05 (alpha/degree of error/significant degree). Based on the ANOVA table, if a sig value of 0.000 is less than 0.05, then the hypothesis is accepted. It means that the negative sentiment variable significantly affects stock return.

H2: That positive sentiment has a significant effect on stock returns

If the Sig. The hypothesis is accepted if the value is less than 0.05 (alpha/degree of error/significant degree). Based on the ANOVA table, if a sig value of 0.000 is less than 0.05, then the hypothesis is accepted. It means that the positive sentiment variable significantly affects stock return.

H3: Negative sentiment and positive sentiment have a significant effect on stock return

The hypothesis is accepted if the significant value is less than 0.05. Based on the ANOVA table, if a sig value of 0.000 is less than 0.05, then the hypothesis is accepted. It means that simultaneously, the variables of negative and positive sentiment have a significant effect on stock return.

Table 3. ANOVA Test

	Sum of Squares	df	Mean Square	F	Sig.
Regression	0.028	2	0.014	21247.655	0.000b
Residual	0.000	160	0.000		
Total	0.028	162			

Source: Data Proceed (2023)

Table 4. Coefficient of Determination

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.998a	0.996	0.996	0.00081

Source: Data Proceed (2023)

Discussion

Investor sentiment can arise when an unexpected event has a major influence on all sectors of society. These events create a sense of uncertainty, fear, and panic among investors who are influenced and process various information on the internet. Major events that have affected investor sentiment include terrorism, war, covid 19. Investor sentiment can affect the stock market. The COVID-19 pandemic caused companies to go bankrupt, increase unemployment, and increase poverty (Tambunan, 2020), causing investors to feel pessimistic and immediately sell their shares (Pertiwi et al., 2022). Furthermore, Pertiwi et al., (2022) stated that the impact of the COVID-19 pandemic is investors' pessimistic feelings about the company's future. Investor preferences attracted investment at the beginning of the emergence of COVID-19 news to avoid greater losses. The pessimistic attitude of investors can be seen from investor panic in responding to any information about COVID-19 that causes price fluctuations and stock trading (Romadhon & Ardiansyah, 2022). Stock information affects investor sentiment when received by noise traders who make transactions according to intuition without analysis of investor sentiment.

During the Covid-19 pandemic, investor signals can be seen in the search engine Google Trends. Many new terms emerged when the COVID-19 pandemic hit. These new terms that appear can be distinguished into positive and negative. The results of research on the hypothesis test show that positive and negative sentiments have a significant effect on stock return, which means that the hypothesis is accepted. Following research by Firdaus, (2021) also Fadhillah & Faisal, (2017), which states that investor sentiment has a positive or unidirectional significant influence on stock returns. And this research refuse research by Shah et al., (2023) mentioned that there is no influence on investor sentiment on stock returns. Salsabila et al., (2020) and Pertiwi et al., (2022) mentioned that during the pandemic, investor sentiment negatively affected stock returns because investors made stock withdrawals to avoid greater losses.

CONCLUSIONS

The Covid 19 pandemic has become an event recorded in history about disease outbreaks with a large and evenly distributed influence in all corners of the world. This pandemic has caused the world community to experience fear, uncertainty, and panic. The investor also perceives it and forces him to make investment decisions or withdraw his money for his life. With this pandemic, it can affect investor sentiment and will affect the stock market. Based on research results and discussions on positive and negative sentiment, investors can affect stock returns on the Jakarta Islamic Index. From this research, stock returns can be influenced by investor sentiment. Investors need to consider stock returns if there is an extraordinary event and a big impact, such as the Covid-19 pandemic.

This research has the advantage of analyzing multiple linear regressions of positive and negative investor sentiment taken from Google Trends metadata to analyze stock returns on the Jakarta Islamic Index. However, the limitation of this study is only to examine the effect of investor sentiment on stock returns. It would be better if this study continued with correlation analysis or reciprocal relationships on these variables.

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