Impact Of Sentiments On The Stock Market

Avnoor Singh

Abstract
In the early 17th century, when the first recognised stock market was established in Amsterdam, it became a very crucial component in the economy of the whole world. It was a component, where both buyers and sellers could interact for trading the shares of public limited companies. Since then, the stock market has transformed into a huge chain consisting of several trading platforms and exchanges. These days, stock markets, such as the New York Stock Exchange (NYSE) and the Nasdaq are the most famous stock exchanges across the globe.

Conversely, sentimental analysis plays the role of a powerful tool in the realm of stock market. It takes into consideration the attitudes of investors and also emotions expressed on social media, newspapers, reports, etc. This data is analyzed so that traders and investors can gain crucial information on market trends and investor behavior. This significantly affects stock prices and one's trading strategies.

The stock market played a crucial role in the early stages of industrialization. By providing a platform for raising money, it enabled the financing of large-scale industrial projects and infrastructure developments. This led to the stock market's performance being seen as a barometer of economic health, influencing economic policies and public sentiment.

Considering this, sentiments played a huge role in the stock market. As stated by Baker and Wurgler (2006, 2007), sentiments have predictive power for small, young and volatile stocks. But does it hold true for all the stocks? For that sentiment needs to be defined. In order for a hypothesis to hold true, a basis in facts needs to be held true. For that reason, sentiment can be defined, particularly in the case of stock market, as the overall attitude or mood of investors toward a particular financial market or asset. It shows the collective emotions and outlooks of the investors, influencing their trading behaviors and decisions.

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I.   Introduction

The stock market became an anchor for the global economy, and was often used as a means for technical and fundamental analysis. By analyzing historical data and sentiment from newspapers, social media, and the market, this research paper aims to explore the impact of positive or negative sentiments leading to market rallies or downturns. It also examines the mechanisms through which sentiments spread and have control over investor decisions. [1]

How sentiments affect stock market performance

While talking about the sentiments, one might come across famous terms such as a bullish or a bearish market. The idea behind this is very trivial. In economics, the price of any commodity or stock is determined by the interaction between the demand and supply of it. Demand means the willingness and ability of consumers to consume a good (stocks in this scenario) at a given price, and supply refers to the willingness and ability of supplies to supply a good/at given price. Simply, when the demand of a product rises, relative to its supply, the price increases, vice versa, ceteris paribus. The demand for the product directly reflects the market sentiment. Due to the herding investor behavior, where investors follow the crowd if the sentiment is positive, more investors will buy stock, driving prices up, and if the sentiment is negative, investors will demand less of the stocks and might also start selling the stocks, causing the prices to drop.

II.   Measuring The Market Sentiment

Efficient Market Hypothesis (EMH) and Sentiment Analysis

A method proposed by Eugene Fama, ie, the Efficient Market Hypothesis (EMH), is a hypothesis which states that all available information is fully reflected in stock prices, making it impossible to consistently achieve higher-than-average returns. Contrary to this, sentiment analysis challenges EMH by stating that market

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[1] Researchgate "The evolution of studies on social media sentiment in the stock market: Insights from bibliometric analysis" Researchgate

sentiment, influenced by newspapers, social media, etc, can lead to predictable price movement. Studies have shown that incorporating sentiment data can sometimes predict short-term stock price changes, indicating market inefficiencies.

Behavioral Finance Theory

It is a field that merges psychological theories with traditional financial theories to explain why investors sometimes make irrational decisions, such as those driven by emotion rather than logic. One of the key concepts in this includes Cognitive biases. These are systematic patterns of deviation from norm or rationality in judgment, such as overconfidence, confirmation or anchoring bias.

There are case studies and empirical evidence to back this. Research has demonstrated that investor sentiment, as measured by surveys or market-based measures such as trading volume and volatility, is a significant predictor of stock returns. High sentiment typically precedes lower future returns, while low sentiment precedes higher returns.

The study by Tetlock (2007) "Giving content to investor sentiment: The role of media in the stock market" found that high media pessimism predicts downward pressure on market prices which supports the notion that news sentiment can significantly impact investor behavior and market outcomes.

Similarly, a study done by Bollen, Mao and Zeng in 2011, on Twitter mood (currently X), and stock market performance, found that the collective mood states extracted from Twitter feeds, correlated with market indices. Notably, calmness in tweets was a strong predictor of positive market performance.

Models used to analyze the relationship between sentiment and stock market performance

To analyze the relationship between sentiment and stock market performance, various models and techniques, ranging from traditional statistical methods to advanced machine learning algorithms are involved. An example of this can be the linear regression model. It is a model which predicts stock market performance using a single sentiment variable, which is assumed to be linear. However, by incorporating multiple sentiment variables and other control variables such as economic indicators, a multiple linear regression model can be attained. This can be used to determine the direct impact of sentiment scores on stock prices and returns, which can help to quantify the extent of the sentiment on the variations in stock market performance.

Another approach to this can be the Time series model. This is crucial in understanding and predicting the relationship between sentiment and stock market performance. This is because they capture the temporal dependencies and dynamics in the data.

Implications of market sentiment

Measuring the market sentiment is the same as anticipating what will happen in the future. When certain trends become anticipated, traders tend to bring that anticipation to fruition which can have various effects on the market.

Market bubbles and crashes

During times of excessively high market sentiments, it can inflate asset bubbles, driving the asset prices far beyond their intrinsic or face value, and just like all other bubbles, when it bursts it leads to a market crash.

Conversely, negative sentiment, particularly panic, can also lead to a market crash, where stock prices plummet in a short period due to mass selling.

Sentiment Indices and Media Influence

An index is a very powerful tool to find out basically anything. In this scenario, to measure the consumer confidence, the use of indices will be optimal, such as the consumer confidence index, which as the name suggests, does exactly its job. For this, media will play a huge role in shaping the environment and the sentiment, by releasing news about the economy, government earnings, corporate earnings and geopolitical events.

Market Volatility

According to investopedia "Volatility is a statistical measure of the dispersion of returns for a given security or market index. In most cases, the higher the volatility, the riskier the security. Volatility is often measured from either the standard deviation or variance between returns from that same security or market index." In simpler terms, it means the degree of change of prices. How fast it goes up or down.

When investors react emotionally to news and events, their actions can lead to fluctuations in stock prices, Positive news will lead to optimism, leading to an increase in buying and a surge in prices. Similarly, negative news will trigger fear and panic, causing drops. For instance, during the 2008 financial crisis and the COVID-19 pandemic in 2020, the market experienced extreme volatility due to fear and distress.

Impact on IPOs and Fundraising

Market sentiment significantly impacts the performance of IPOs (Initial Public Offerings) and companies' ability to raise capital. Positive sentiment can lead to successful IPOs, with new companies raising substantial funds achieving high valuations. Although, negative sentiments can result in poor IPO performance and challenges in fundraising.

Periods of high emotions and positive sentiments have led to enterprises having oversubscribed IPOs and majestic valuations. Examples of this include Airbnb and Snowflake, showing the role sentiment plays in the life of IPOs.

Influence on Corporate Decisions

Market sentiment also gives direction to the decisions and strategies that an enterprise may take. Companies will adjust their actions on the judgment of the ongoing sentiments, mergers and acquisitions, expenditures, stock buybacks, etc. During times of positive sentiment, companies tend to issue new shares or corporate bonds.

III.   Conclusion

Market Sentiment plays a huge role in the dynamics of stock market, displaying a huge palette of effects on both individual stocks and the market as a whole. From steering volatility, and creating bubbles, to influencing the behavior of traders and investors, and companies, the impact is clear and versatile. Even though it might be having a huge control over the market, it might also have negative effects. It often leads to increased volatility, short-term inefficiencies, hindrance for IPO's and enterprise strategies, underscoring the importance of sentiment in financial decision-making. By identifying and analyzing market trends, traders and investors can use it to their advantage, making informed decisions about investment and developing strategies to mitigate adverse effects.

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