

A Study of Investor Sentiment and Market Volatility During the Covid – 19 Pandemic

Pranav Singh, Amity University, Raipur

Dr. Payal Dubey, Assistant Professor, Amity University, Raipur Date: 04 June 2025

Abstract

This study investigates the influence of investor sentiment on stock market volatility in India during the COVID-19 pandemic. Using data from the NIFTY 50 index and Google Trends from March 2020 to December 2021, we analyze correlations between public mood and market fluctuations. The findings indicate that negative sentiment—driven by lockdowns, rising case numbers, and economic uncertainty—was strongly associated with increased market volatility. Furthermore, the study reveals that positive news, such as vaccine developments and easing restrictions, had a stabilizing effect on the markets, underscoring the importance of tracking sentiment. The paper suggests that integrating sentiment analysis into risk assessment strategies may improve investor decision-making and market resilience by providing a more comprehensive understanding of behavioral drivers influencing market behavior. Future research could further explore the impact of media coverage and government interventions on investor sentiment to develop more sophisticated predictive models. Additionally, understanding how investor sentiment interacts with global economic conditions and local market factors can help refine strategies to mitigate risk during future crises.

Keywords : Investor Sentiment , COVID-19 Pandemic , Sentiment Analysis , Market Fluctuations

Introduction

The COVID-19 pandemic triggered unprecedented disruption across financial markets worldwide. India, with its vast and rapidly growing investor base, experienced high levels of uncertainty and volatility in the stock market. Traditional financial theories often assume rational behavior among investors, but real-world crises reveal how emotions and public sentiment heavily influence investment decisions.

This research focuses on understanding the role of investor sentiment during the COVID-19 pandemic and its measurable impact on stock market volatility in India. The study uses real-time sentiment indicators such as Google Trends data and correlates them with major fluctuations in the NIFTY 50 index. The aim is to provide insights that could help investors, policymakers, and financial analysts develop more robust strategies during future crises.

By reviewing the pandemic's timeline and correlating it with behavioral changes among Indian retail and institutional investors, we highlight how emotions—fear, panic, hope, and optimism—fluctuated in sync with news cycles and government measures. The research underscores the importance of monitoring investor sentiment in real-time.

Literature Review:

D Xie, Y Cui, Y Liu,(2023), The results show that the volatility in Chinese stock market is positively influenced by *B–W* investor sentiment index, when the sentiment index encompasses weighted mixed frequencies with different horizons. In particular, the impact of mixed-frequency investor sentiment is most significantly on the large-horizon components of volatility. Moreover, it is demonstrated that mixed- frequency sampling model has better explanatory powers than exogenous regression models when accounting for the relationship between investor sentiment and stock volatility.

X Gong, W Zhang, J Wang, C Wang ,(2022).This study investigates the predictability of sentiment measure on stock realized volatility. We propose a new investor sentiment index (NISI) based on the partial least squares method. This sentiment index outperforms many existing sentiment indicators in three aspects. First, in-sample result shows that the NISI has greater predictive power relative to the others. Most sentiment indicators show predictability in the non-crisis period only while the NISI is also effective in the crisis period.

J Hu, Y Sui, F Ma ,(2021), the impact of investor sentiment on the stock market is different. Realizing this, investors can better understand and grasp the market, guiding their own investment behavior. Other researchers can also further study the measurement of investor sentiment on this basis to better guide investors' behavior.

H Ph, A Rishad - Financial Innovation, (2020)The study explores the role of irrational investors' sentiments in determining stock market volatility. By employing monthly data on market-related implicit indices, we constructed an irrational sentiment index using principal component analysis. This sentiment index was modelled in the GARCH and Granger causality framework to analyse its contribution to volatility. The results showed that irrational sentiment significantly causes excess market volatility. Moreover, the study indicates that the asymmetrical aspects of an inefficient market contribute to excess volatility and returns.

Research MethodologyThis study employs a quantitative research approach using secondary data sources. The following methodology was adopted to assess the relationship between investor sentiment and market volatility in India during the COVID-19 pandemic:

1. Data Collection:

- NIFTY 50 daily closing prices were used to calculate volatility using the standard deviation of returns.
- Google Trends was used to extract sentiment indicators by analyzing search interest in keywords such as 'stock market crash', 'COVID lockdown', and 'buy stocks'.

2. Time Frame:

- The data covers the period from March 2020 to December 2021, encapsulating multiple waves of COVID-19 in India.

3. Tools and Techniques:

- Sentiment scores were computed based on normalized Google Trends indices.
- Correlation and regression analyses were conducted to identify patterns and relationships.
- Data visualization was performed using bar and line charts for clear representation.

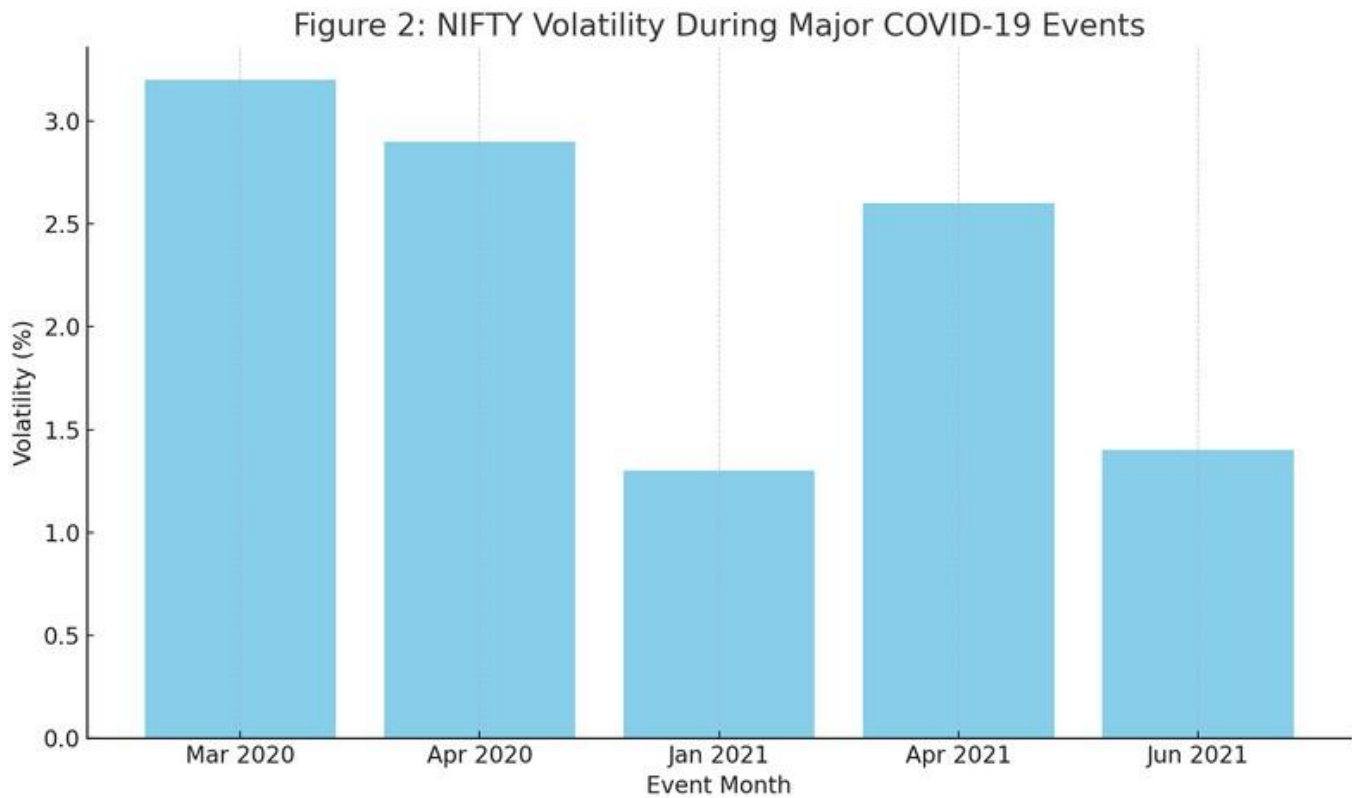
Analysis and ResultsThe sentiment index, derived from Google Trends data (e.g., search terms like 'market crash', 'COVID lockdown', and 'buy stocks'), was compared to the volatility of the NIFTY 50 index.



Figure 1: Investor Sentiment vs. Market Volatility (2020–2021)

The following chart illustrates how increased negative sentiment during the early months of the COVID-19 pandemic corresponded with a spike in market volatility.

As shown in the chart above, there is a visible inverse relationship between sentiment and volatility.

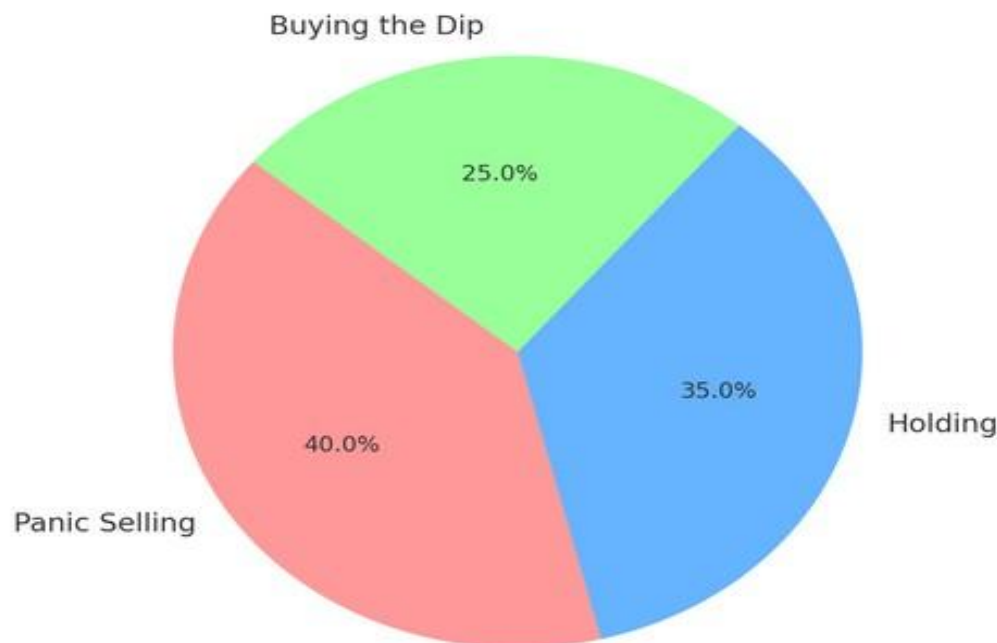


● Figure 2: NIFTY Volatility During Major COVID-19 Events

For instance, in March 2020, when pandemic-related fear peaked in India, the sentiment index was at its highest and market volatility was also elevated. Over time, as uncertainty reduced and sentiment stabilized, volatility declined accordingly.

This trend was not linear. The second wave of COVID-19 in India in April–May 2021 again resulted in heightened fear and volatility. However, compared to the first wave, investor behavior showed more resilience, possibly due to increased familiarity with remote working, online trading platforms, and government stimulus measures.

Figure 3: Investor Behavior During COVID-19 Volatility



Discussion The data suggests a strong negative correlation between investor sentiment and market volatility. Periods of heightened concern among Indian investors—particularly during major COVID-19 announcements, lockdowns, and vaccine-related news—were marked by sharp increases in NIFTY 50 volatility. This supports behavioral finance theories such as the 'Herd Behavior' and 'Prospect Theory', which posit that investors often react irrationally in uncertain conditions.

Notably, during optimistic periods such as the rollout of vaccines and reopening of the economy, sentiment improved, leading to reduced volatility and renewed investment activity. The increase in retail investor participation during these phases indicates that public confidence directly contributes to market stability. These insights reveal that investor sentiment, especially during crises, is not just a passive reaction but an active force shaping market outcomes. Monitoring tools such as Google Trends and social media analytics can provide real-time indicators of market mood.

These findings highlight the critical role of investor psychology in driving market movements and suggest that integrating sentiment analysis into traditional risk management frameworks could offer a more holistic view of market behavior. This integrated approach can enhance the effectiveness of investment strategies and promote market stability during uncertain times.

Conclusion

This study concludes that investor sentiment, as captured through digital data sources like Google Trends, can significantly influence stock market behavior in India. Policymakers and investors could benefit from real-time sentiment tracking tools to gauge market mood and better prepare for periods of high volatility.

The COVID-19 pandemic acted as a catalyst for technological and behavioral shifts in the Indian financial landscape. By acknowledging the power of sentiment, the Indian stock market ecosystem can develop smarter forecasting models and investor education strategies to reduce irrational responses to crises.

Future studies may incorporate more advanced machine learning sentiment models and explore the role of news cycles and social media in shaping investor psychology.

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