

An Empirical Investigation of Investor Sentiment and Nifty 50 Returns Using VAR and ARDL Approaches

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ABSTRACT

This study focuses on the link between investor sentiment and Nifty 50 returns in the Indian stock exchange market within the framework of behavioural finance. The paper explores both the short-term and long-term links through two methodologies: VAR Granger Causality testing and the ARDL framework. According to the VAR Granger causality tests, there is a mutual causal link between investor sentiment and Nifty 50 returns. In addition to this, there is a long-term link between investor sentiment and market returns based on the ARDL bound testing results. This means that changes in investor sentiment affect the market returns in the long term. The overall results point out the significant effect of behavioural factors in the price formation in the Indian stock market and that investor sentiment plays a dual role in market fluctuations.

Keywords: Nifty 50, VAR, ARDL, Indian Stock Market, Investor Sentiment.

Introduction

The stock market is very important for the economic growth of a nation because it helps in mobilization of savings, capital formation, and growth in industries and finance. There has been rapid growth in stock markets in developing nations like India because of economic liberalization, technological progress, globalization, and increased participation of investors. Out of the many stock market indices prevailing in India, the Nifty 50 is one of the most important measures of the behaviour of the stock market. Traditionally, there were many explanations to account for the changes in stock prices, such as changes in macroeconomic variables, firm fundamentals, interest rates, and inflation, among others. However, there have been many instances of financial crises and anomalies that have raised doubts about the validity of traditional finance theories, making behavioural aspects of the stock market extremely important.

Conventional finance theory, especially EMH theory, rests on the assumption that investors act logically and all information is reflected in stock prices. Investors base their decisions purely on economic fundamentals; thus, stock prices always reflect their real value. However, empirical evidence such as high volatility levels, irrational investment behaviour, and speculative nature of markets suggests that psychological and emotional factors play an important role in affecting the behaviour of investors. Therefore, behavioural finance, which takes into consideration the psychology of investors in financial decision-making and asset pricing, has evolved as another alternative approach to conventional finance. Behavioural finance states that investors do not necessarily act with logical reasoning; instead, investors are swayed by cognitive, emotional, and other factors in investing. Investor sentiment refers to the general mood, beliefs, optimism, or pessimism of investors about future conditions of the market. In other

words, investors respond to market information and economic events emotionally, not logically. According to Khan & Ahmad (2019), investor sentiment is the psychological and emotional response of investors, forming their expectations apart from economic fundamentals.

The importance of investor sentiment in financial markets has been well recognized in recent years. Baker & Wurgler (2006) showed that investor sentiment leads to deviations from the intrinsic values of stock prices in informationally asymmetric and speculative markets. They proved that sentiment investors affect stock returns substantially, especially in case of non-arbitrage able securities. Also, Brown & Cliff (2005) found that investor sentiment has a close link with market movements and speculative activities of market participants. The above-mentioned papers created an adequate theoretical framework for studying the connection between investor sentiment and stock market performance. Due to the rise of technologies, the measurement of investor sentiment also changed. Traditional measures based on surveys and various proxies, such as trading volume, dividend premium, initial public offerings (IPOs), and closed-end fund discounts, gave way to the new tools. Now, research mostly deals with indicators obtained from financial news, social media and Internet search activity. According to Huang et al. (2018), the information obtained through news and social media covers investor sentiment more broadly and comprehensively compared with other tools. The authors found that investor sentiment predicts returns not only on stocks but also on bonds, commodities, foreign exchange markets, and housing markets. The existing literature on behavioural finance indicates that there could be both short-term and long-term implications for financial markets because of investor sentiment. On the one hand, investor sentiment in the short term could cause temporary discrepancies in stock prices due to over-reaction, under-reaction, speculation, and herding behaviours. On the other hand, investor sentiment in the long term might shape financial trends and investment decisions based on their persistence. For instance, the authors of the study conducted by Rehman and Shahzad (2016) identified the positive impact of optimistic investor sentiment on industry returns and the negative impact of pessimistic sentiment. Furthermore, investor sentiment and stock returns demonstrate cyclicity during times of financial and economic crisis.

It should be noted that the Indian stock market represents a unique area where investor sentiment could be analysed due to the peculiar features of the country's economy and financial market development within the recent two decades. Indeed, there was an active entry into the market of retail investors, introduction of internet trading, inflows of foreign investments, and fast spread of financial information. As a result, investor sentiment in India is shaped by various factors such as inflation, interest rates, elections, budgetary policy, geopolitics, business performance and financial results, macroeconomic indicators, and others. The importance of investor sentiment became quite visible especially during major economic events like 2008 global financial crisis and the outbreak of the recent COVID-19 pandemic. In the period of crisis, the stock markets around the globe suffered extreme volatilities mainly due to investor sentiments arising out of fears, uncertainties, and investor psychology. In India too, market sentiment optimism in the post-crisis period gave rise to extreme rises in stock market indices in spite of negative economic events and crisis. Pessimistic investor sentiment in the times of crises contributed to deep declines in the stock markets. This illustrates the extent to which the investor sentiments have influenced stock market movement in the emerging economy of India. Emerging markets are seen as being more vulnerable to the impact of investor sentiments due to high involvement of retail investors in the market, inefficiency of the market, and presence of speculative behavior of traders. According to Rehman & Shahzad, investor sentiments have more impact on the movements in the market of developing countries as compared to developed countries due to presence of large numbers of noise traders and emotionally biased investors in them. Khan & Ahmad too have found strong evidence of irrationality among emerging investors and established that investor sentiments drag stock markets from the path of sustainability based on economics. While there is extensive literature available on investor sentiments, there is very little empirical evidence on the short run and long run relationship between investor sentiment and return on the Nifty 50 in India. Most studies on investor sentiment are concentrated on the developed economies or deal with short run analysis. Hence, the present study will attempt to examine the relationship between investor sentiments and Nifty 50 returns in Indian stock market within the framework of behavioural finance. Specifically, the study will attempt to find whether investor sentiments affect returns on Nifty 50 in both the short run and the long run periods. For this purpose, econometric techniques of VAR Granger Causality test and Autoregressive Distributed Lag (ARDL) model will be used.

Review of Literature

It is now widely recognized that the phenomenon of investor sentiment plays an important role in financial economics and behavioural finance. According to efficient market theories, notably, the Efficient Market Hypothesis (EMH), the stock market is rational and investors are considered as rational agents, making decisions based on the available market information. Nevertheless, the occurrence of market bubbles, crashes, irrational volatility, and excessive speculation has challenged EMH and encouraged behavioural finance scholars to explore investor sentiments in terms of their psychological basis and consequences. Thus, the appearance of behavioural finance brought revolutionary changes in financial market research as investors' sentiments became crucial variables in explaining market behaviour. One of the most important contributions in this area was made by Baker and Wurgler (2006). The authors stated that investors' sentiment had a great impact on stock prices, especially those difficult to value and difficult to arbitrate. It was proved that investor sentiments affect small-cap, young, very volatile, distressed, and non-dividend stocks to a greater extent than already established stocks. Moreover, it was noted that optimistic sentiments usually result in the overpricing of stocks, while pessimistic sentiments cause under-pricing (Baker & Wurgler, 2006). Baker and Wurgler (2007) explored the influence of investor sentiments on the whole market performance. The authors mentioned that financial markets cannot be entirely rational since they are determined by the emotions, beliefs, and speculations of investors. The authors provided examples of sentiment-driven market crises, including the Great Crash of 1929, the dot-com bubble, and the Black Monday crash of 1987. Baker and Wurgler (2007) asserted that sentiments played a crucial role in shaping stock prices and market volatility. Furthermore, Baker and Wurgler (2006) explored the relationship between investor sentiments and stock returns. It was stated that sentiments had great explanatory potential in terms of predicting short-term stock returns, although they were unable to accurately forecast future market developments (Baker & Wurgler, 2006). This study proved that investor sentiments had a great impact on stock prices and market behaviour. Another group of papers discussed the influence of investor sentiment on international stock markets. Schmeling (2009) investigated the effects of investor sentiments on stock markets across 18 countries. The author came to a conclusion that sentiment indicators negatively predicted future stock returns across the selected countries. Moreover, high levels of investor optimism resulted in decreased future returns, while high levels of pessimism were associated with high future returns. Most importantly, Schmeling (2009) discovered that investor sentiments affected stocks to a greater extent in countries characterized by low integrity and greater propensities towards herd behaviour. This finding was especially relevant to emerging markets with high levels of retail investor participation and information asymmetry, such as India. Another important international perspective on the problem of investor sentiment was provided by Baker, Wurgler, and Yuan (2012). The authors introduced new notions of global and local investor sentiments, which could influence the stock market in any country. It was discovered that global and local sentiments have a strong impact on stock market performance, particularly in the case of difficult-to-value and difficult-to-arbitrate stocks (Baker, Wurgler, & Yuan, 2012).

Another stream of literature concentrated on herding behaviour as a phenomenon related to investor sentiments. Bikhchandani and Sharma (2001) argued that investors tended to imitate other investors rather than analyse market data themselves. This process exacerbated market volatility, resulting in financial instabilities, especially in periods of uncertainty. Similar conclusions were reached by Spyrou (2013) who conducted a review of the existing literature and found that herding behaviour was one of the main features of modern financial markets, especially during the periods of market crises and speculative bubbles (Spyrou, 2013). These studies proved that investor sentiments had a profound effect on stock market performance in general.

Research on investor sentiments emerged in the Indian stock market due to its fast development and growth in the number of retail participants. Sehgal, Sood, and Rajput (2010) conducted one of the first surveys exploring the notion of investor sentiments in India. First of all, the authors defined investor sentiments and identified numerous economic, market-based, and regulatory factors affecting investor behaviour. It was found that some of the most significant determinants of investors' sentiments included GDP growth, inflation, interest rates, market liquidity, price-earnings ratios, and put-call ratio. Moreover, the authors revealed the existence of bidirectional effects between investor sentiments and stock market performance. Investor sentiments not only impacted market returns but were influenced by them (Sehgal et al., 2010). Another Indian study was conducted by Pandey and Sehgal (2019) who attempted to assess the role of investor sentiments in explaining asset pricing anomalies in the Indian market. The authors introduced two alternative indicators of investor sentiments for India and assessed

their impact on some of the most popular asset pricing models, including CAPM and the Fama-French model. As a result, it was found that traditional asset pricing models were unable to adequately describe stock market behaviour. At the same time, the introduction of investor sentiments into these models improved their explanatory potential. This paper is especially important because it supports the relevance of behavioural finance for explaining stock market performance in emerging markets like India. One of the studies exploring firm-specific impacts of investor sentiments was conducted by Dash and Mahakud (2013). The authors investigated whether the effects of investor sentiments differed in various industries. It was concluded that the impact of sentiment risk on stock prices was much stronger in most industries, although the intensity of its effects varied depending on the specific industry. The authors asserted that sentiment mispricings occurred mostly in difficult-to-value and difficult-to-arbitrage industries, proving the argument stated previously by Baker and Wurgler (2006). Stock market volatility in relation to investor sentiment is another area worth exploring in India. For example, Kumari and Mahakud (2015) estimated the extent to which investor sentiments predicted stock market volatility in the Indian environment using the GARCH and VAR-GARCH models. To achieve this purpose, the authors created an investor sentiment index using numerous sentiment indicators. The results proved that investor sentiments had a strong impact on stock market volatility, with pessimistic sentiments contributing more to increased volatility. This result supported the noise trader hypothesis, formulated in the works by Black (1986) and De Long et al. (1990) (Kumari & Mahakud, 2015). In another study, Kumari and Mahakud (2016) attempted to estimate the relationship between stock market volatility and investor sentiments in India. Applying vector autoregression analysis, the authors found that investor sentiments had a unidirectional influence on market volatility. This paper proved that the irrationality of investor behaviour resulted in high levels of market instability and volatility in emerging markets like India (Kumari & Mahakud, 2016).

The problem of short-term and long-term relationship between investor sentiments and stock market returns was explored by Dash and Maitra (2017). The authors used wavelet transformation to evaluate the effects of investor sentiments on stock market returns at different time intervals. The results proved that investors' sentiments had an impact on stock market returns both in short run and long run, with sentiment effects remaining constant regardless of whether investors are short-run traders or long-run investors. This study is especially important in relation to the current paper because it explores the time-variant relationship between the discussed variables. Some papers also attempted to explore the firm-specific aspects of investor sentiments. For example, Fu et al. (2020) investigated the impact of investor sentiments on the probability of stock crashes in the company. The results revealed that high levels of investor optimism increased this probability, especially when firms suffered from low liquidity. Another firm-specific aspect of investor sentiments was explored by Seok, Cho, and Ryu (2019). In particular, the authors studied the role of investor sentiments in stock market reaction to positive earnings announcements. It was discovered that stock prices reacted much stronger to good news when investor sentiments were high, which meant that high investor sentiments increased market reaction to favourable news (Seok et al., 2019). Some studies explored the link between investor sentiments and managerial behaviour of firms. For instance (Habib & Hasan, 2015) tried to understand whether investor sentiments impacted managerial decisions to take risks in the course of company life cycle. According to the findings, high investor sentiments contributed to managers' willingness to engage in risky activities. This result revealed the impact of market sentiments on the managerial decisions of companies. Corredor, Ferrer, and Santamaria (2013) attempted to find out whether sentiments were caused by stock-specific and/or country-specific factors. As a result, it was found that both of them played an equally important role in explaining sentiment intensity. This finding is especially important for exploring emerging markets such as India because of their unique characteristics.

Data and Research Methodology

The present study is empirical in nature and aims to examine the short-run and long-run relationship between investor sentiment and Nifty 50 returns in the Indian stock market. The study is based on the principles of behavioural finance, which argue that investor psychology and sentiment significantly influence stock market movements. To analyse this relationship, various econometric techniques such as unit root tests, Vector Autoregression (VAR), Granger causality test, and Autoregressive Distributed Lag (ARDL) models have been employed. The study mainly focuses on identifying whether investor sentiment affects Nifty 50 returns in both the short term and the long term. With this objective two hypothesis are framed:

H₀₁: There is no Granger causality between investor sentiment and Nifty 50 returns.

H₀₂: There is no long run relationship between Investor sentiment and Nifty 50 returns.

Data

The study is entirely based on secondary data. The data relating to the closing prices of the NIFTY 50 index have been collected from the official website of the National Stock Exchange (NSE). The investor sentiment index is formed using different proxies of sentiment measures and the same is taken from NSE and Security Exchange Board of India (SEBI). The study uses time-series monthly data for the period 2005-2025. The period and proxies are selected on the basis of data availability.

Research Methodology

This study examines the causal and long run relationship between the sentiment and nifty 50 returns, with help below time series econometric test:

Stationary Test

Since the study uses time-series data, it is essential to test the stationarity of the variables before conducting econometric analysis. Non-stationary data may lead to spurious regression results and unreliable statistical inference. Therefore, the study employs two widely used unit root tests: Augmented Dickey-Fuller (ADF) Test and Phillips-Perron (PP) Test.

The Augmented Dickey-Fuller (ADF) test is used to determine whether the variables contain a unit root or are stationary in nature. The null hypothesis of the ADF test states that the series contains a unit root (non-stationary), whereas the alternative hypothesis states that the series is stationary. The Phillips-Perron (PP) test is also employed to verify the stationarity of the variables. Unlike the ADF test, the PP test corrects for serial correlation and heteroskedasticity in the error terms without adding lagged difference terms. The null hypothesis for the PP test is similar to the ADF test.

Granger Causality Test

The Granger causality test is used to determine the direction of causality between investor sentiment and NIFTY returns. The test identifies whether past values of one variable help predict another variable. Similarly, reverse causality is also tested to examine whether stock market returns influence investor sentiment. Granger Causality determine whether the X series Granger causes the Y series or vice versa.

$$X_t = \sum_{j=1}^m a_j X_{t-j} + \sum_{j=1}^m b_j Y_{t-j} + \varepsilon_t$$

$$Y_t = \sum_{j=1}^m a_j X_{t-j} + \sum_{j=1}^m b_j Y_{t-j} + \varepsilon_t$$

Autoregressive Distributed Lag (ARDL) Model

To examine the short-run and long-run relationship between investor sentiment and NIFTY returns, the study applies the Autoregressive Distributed Lag (ARDL) approach developed by Pesaran et al. The ARDL model is suitable when variables are integrated at different orders, i.e., I(0) or I(1), but not I(2). The ARDL bounds testing approach is used to determine the existence of cointegration among variables. If the calculated F-statistic exceeds the upper bound critical value, a long-run relationship exists between investor sentiment and NIFTY returns.

Data Analysis and Interpretation

The present study investigates the relationship between investor sentiment and NIFTY 50 returns in the Indian stock market by applying various time-series econometric techniques. The empirical analysis was conducted in three stages. First, the stationarity properties of the variables were examined using the Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) unit root tests. Second, the causal relationship between investor sentiment and NIFTY returns was analysed using the VAR Granger causality test. Finally, the long-run association between the variables was examined through the Autoregressive Distributed Lag (ARDL) bounds testing approach. The findings of these analyses are discussed in detail below.

Descriptive Statistics**Table:1 Descriptive Statistics**

| Variables | SI | Nifty50 |
|-------------|----------|---------|
| Mean | 0.002 | 0.01 |
| Median | -0.071 | 0.011 |
| SD | 0.768 | 0.06 |
| Min | -1.451 | -0.307 |
| Max | 3.563 | 0.247 |
| Skewness | 0.759 | -0.905 |
| Kurtosis | 4.114 | 8.049 |
| Jarque-Bera | 37.19338 | 302.051 |
| P Value | 0.000 | 0.000 |

Source: Author's own calculation

From the descriptive statistics obtained above, it can be seen that SI has an average value of 0.002 with a standard deviation of 0.768 while Nifty50 has a mean return of 0.010 with a standard deviation of 0.060, meaning that SI is more volatile than Nifty50. Since the value of skewness of SI is 0.759, it means that the series has a positively skewed distribution while that of Nifty50 has a value of -0.905, meaning that the series is negatively skewed. The two-time series have a leptokurtic distribution since the kurtosis measures exceed 3. The results from the Jarque-Bera test show $p < 0.01$ which indicate that data is not normal and that is common in time series.

Stationarity Test

Before estimating any time-series econometric model, it is essential to examine the stationarity properties of the variables. Non-stationary data may produce misleading and spurious regression results, thereby affecting the reliability and validity of empirical findings. Therefore, the Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests were applied to determine whether the variables included in the study possess unit roots.

Table 2: Unit Root Test

| Variable | At Level | | | |
|----------|-------------|--------|-------------|-------|
| | ADF | | PP | |
| | t-Statistic | Prob | t-Statistic | Prob |
| SI | -2.9011 | 0.0466 | -6.11 | 0.000 |
| Nifty50 | -15.5411 | 0 | -15.5 | 0.000 |

Source: Author's own calculation

The outcome of the ADF and PP tests shows that investor sentiment index (SENTINDEX) and NIFTY returns are stationary at the level form. In other words, both are considered to be integrated of order zero, denoted by $I(0)$. Stationarity of the variables means that the statistical properties such as mean, variance, and covariance do not change with respect to time. The implication of the fact that the variables are stationary at the level form is that the effect of any shock that may affect either investor sentiment or NIFTY returns will be only transient.

VAR Granger Causality Analysis

From the results in Table 2, it can be stated that the probability values for both the cases are below the 5 percent significance level. As a result, it leads to the rejection of the null hypotheses (H_{01}) in both the directions of causation. Hence, the findings prove the presence of bi-directional causal relation between investor sentiment and NIFTY returns. The causation in the first direction reveals that there is a Granger-causal relation from NIFTY returns towards investor sentiment. With a probability value of 0.0019, there is a highly significant causal relation from stock market returns to investor sentiment. The above result implies that the stock market returns have a significant impact on the sentiments of the investors. It appears that past changes in the stock market returns have a significant effect on the behavior of investors. Past market returns induce confidence, optimism, and positive investor sentiment, and encourage investors to participate in the stock market. However, poor performance induces fear, uncertainty, and pessimism, which affect investor confidence.

Table 3: VAR Granger Causality Test

| Independent Variable | Dependent Variable | Lag | Chi-sq | P-value |
|----------------------|--------------------|-----|--------|----------|
| Nifty 50 | Sentiment | 5 | 19.023 | 0.001*** |
| Sentiment | Nifty 50 | 5 | 11.441 | 0.043** |

Source: Author's own calculation, Note: **,*** represents 5% and 1% Significance level respectively

This conclusion follows from the behavioural pattern of investors, especially those from developing countries such as India, where the investors' behaviour tends to depend on recent events and current trends within the market. As retail investors make up a large proportion of the Indian market participants, they tend to be highly vulnerable to emotional influences, herd mentality, and speculation practices. Thus, the market situation becomes crucial for investor sentiment. Moreover, this conclusion can be justified by the adaptive expectations theory, which implies that investors change their expectations in accordance with the previous information about market dynamics. Investor behaviour will see price increases as signs of further development and price decreases as signs of instability in the economy or finances. Hence, market performance will become an important psychological trigger influencing investors' behaviour and shaping their sentiments. Secondly, the results of the test show that investor sentiment Granger-causes NIFTY returns. The probability value of 0.0433 proves that investor sentiment significantly impacts future market returns.

The conclusion above implies that the changes in the levels of optimism and pessimism among the investors impact their trading practices, liquidity, and stock prices. In case of the positive sentiment, people are willing to trade their stocks and invest in securities; therefore, there is an increase in demand for stocks and high returns on the market. On the contrary, the negative sentiment creates the situation when people start panicking and sell their stocks; there is no willingness for investments and, thus, lower stock prices. The effect of investor sentiments on the stock return can be regarded as evidence of the core tenet of behavioural finance stating that psychological and emotional aspects play an important role in financial markets. This means that the prices for stocks in India are not regulated by the economic factors only such as dividends, interests, or macroeconomic conditions. Investor sentiment has a significant effect on stock prices as well. Bidirectional causality implies that the feedback loop occurs in the Indian stock market since the stock returns affect investors' sentiments and vice versa. This feedback loop ensures that any increase in returns brings about optimism, which subsequently boosts stock prices higher. Conversely, any fall in prices creates a state of pessimism, which leads to further price falls through panic-induced trading behaviour. Such feedback loops are usually common during periods of speculative bubbles and financial crises. In the period of positive market returns, high levels of optimism lead to stock price overvaluation, while negative market return periods can lead to high pessimistic moods that trigger over-correction in stock markets.

The bidirectional causality findings of this paper confirm earlier empirical studies on the same phenomenon conducted by Brown and Cliff (2004), Baker & Wurgler (2006), Sehgal et al. (2010), Kumari & Mahakud (2016), and Dash & Maitra (2017). In total, the Granger Causality findings confirm that investor sentiment and stock market returns are mutually dependent in the Indian stock market.

ARDL Long Run form and Bound Test

In order to determine whether there exists any stable long-run relationship between investor sentiment and Nifty50 stock return, the researcher applied the Autoregressive Distributed Lag (ARDL) bounds testing technique. The computed F-statistic value is 23.72981, which is much greater than the upper bound critical value at all levels of significance, even 1 percent. Thus, the null hypothesis (H_{02}) of "no levels relationship" is rejected. The acceptance of the alternative hypothesis suggests the presence of cointegration relationship between investor sentiment and Nifty50 stock return in the Indian stock exchange market. According to the results obtained by means of ARDL model, investor sentiment and Nifty50 stock return are perfectly related over time and exhibit equilibrium long-run relationship. Despite the possible emergence of short-term deviations because of the impact of various factors such as speculative behaviour, financial crisis, or economic problems, variables always tend to reach long-run equilibrium position.

Table 4: ARDL Bounds Test and Long-Run Relationship

| F-Bounds Test | | | | |
|----------------------|--------------|---------------------|-------------|-------------|
| | Value | Significance | I(0) | I(1) |
| F-statistic | 23.72981 | 10% | 3.02 | 3.51 |
| k | 1 | 5% | 3.62 | 4.16 |
| | | 2.50% | 4.18 | 4.79 |
| | | 1% | 4.94 | 5.58 |

Source: Author's own calculation

The presence of cointegration means that investor sentiments exert a persistent and systematic impact on the stock market behaviour in India. Psychological elements such as optimism, pessimism, overconfidence, fear, and speculative expectations should be seen as more than short-term influences as they significantly contribute to the determination of long-term trends in the stock market. Moreover, the abnormally high F-statistic value implies a strong long-run relation between investor sentiments and the NIFTY return.

It is especially relevant in the case of the Indian stock market since the rapid rise of individual investors' activity, technological progress in online trading, the spread of financial information through mass media, and increasing social media influence have made the investor behaviour driven by sentiment a key factor determining the stock market dynamics. In fact, investors tend to consider both objective information and rumours about the company's operations, its future development, and other aspects related to the market. Thus, the result fully supports the behavioural finance theory, according to which irrational and predictable actions impact the market in the long run. At the same time, the finding refutes the main principles of the Efficient Market Hypothesis.

The co-movement of investor sentiment and stock returns in the long run indicates that the authorities and regulators must carefully watch sentiment measures to ensure stability in the financial sector. An overly optimistic outlook will create bubbles and cause asset overvaluation, whereas an extremely pessimistic attitude will bring down the markets and result in financial instability. In terms of investments, the results indicate that investor sentiment could be a useful predictor to gauge market trends and the behavior of investors.

Conclusion

The current research investigated the role of investor sentiment in influencing NIFTY 50 returns in the Indian stock market from the perspective of behavioural finance. The key aim of the current research was to determine the impact of investor sentiment on stock market returns in the short run and long run. For this purpose, some econometric techniques like the Augmented Dickey-Fuller (ADF) test, Phillips-Perron (PP) test, VAR Granger causality test, and the Autoregressive Distributed Lag (ARDL) model were used. The results obtained by the study contribute substantially to the body of knowledge on the relevance of investor sentiment in understanding the performance of stock markets in India. As revealed by the results of the ADF and PP unit root tests, investor sentiment and NIFTY returns are stationary at level form. It shows that the variables are stationary over time and suitable for further analysis. The stationarity of the variables is also indicative of the fact that variations in investor sentiment and stock market returns are not permanent and tend to revert back to equilibrium. From the VAR Granger causality test, it was established that there is a bi-directional causality between investor sentiment and NIFTY returns. From the findings, it was established that stock market returns have a positive effect on investor sentiment, while investor sentiment, on the other hand, causes future stock market returns. From the above result, there is evidence of a feedback process in the Indian stock market whereby changes in market returns shape investor psychology and behaviour, which, in turn, affects future stock market returns. Positive stock market returns create optimism and investor confidence, while negative stock market returns create pessimism and uncertainty among investors. Optimistic investor sentiment creates an atmosphere for investment and raises stock prices, while negative investor sentiment creates panic among investors, resulting in stock market downfall.

In addition to this, the ARDL bounds testing technique showed that there is a statistically significant relationship between investor sentiment and stock market returns over time. From the test, the F-statistic exceeded the critical value at all levels of significance. As a result, the null hypothesis was rejected, meaning that investor sentiment and stock market returns move in tandem with each other and establish a long-run equilibrium relationship. The research findings confirm the arguments advanced by

behavioural finance theorists who contest the assumptions of the Efficient Market Hypothesis (EMH). It is evident from the findings that investor behaviour is not always driven by logical thinking, and there are many psychological biases such as optimism, pessimism, overconfidence, fear, and herd behaviour that have an impact on stock market dynamics. The Indian stock market, which has more retail investors' presence, speculations, and rapid flow of information, seems to be vulnerable to sentiment effects.

Generally, this research finds that investor sentiment has an impact on NIFTY performance in both the short and long run. The findings of this study reveal that investor sentiment should be incorporated into the financial and investment decision-making process. Analysing investor sentiment can provide useful insights for investors, portfolio managers, and policy makers. Investor sentiment will also be useful for market regulators in managing financial market risks and ensuring financial market stability. In conclusion, investor sentiment is an essential component in stock market analysis in India.

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