

Rationality of Indian Investors amid Uncertain Times during Covid-19

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Abstract

The present paper aims to analyze the investment decision-making through investor sentiments influenced by three latent variables namely, herding behavior, market factors, and best game in town factors during the lockdown period (March 25, 2020 to May 31, 2020) announced due to COVID-19 in India. A total of 216 people responded to the structured questionnaire floated on various platforms. Structure equation modeling (SEM) has been applied to discern the formulated objective using SPSS and AMOS software. The results were startling as it portrays an Indian investor to be rational in the times of crisis as it is found that investors gave an upper hand to the fundamentals of the company while investing rather than their own sentiments.

A gradual rather than a swerved change in the investors' perception could be observed which is in the betterment of the economy as a whole. Further, overreaction to the news pertaining to the uncertain events is prevented as the investors' hold their water in the upheaval situation. This study could be of use to the financial advisors for understanding the new

behavior of an Indian investor in the times of pandemic. This makes the role of the investors' bigger as they safeguard the movement of stock markets and avert the stock market doom.

Keywords: *Investor sentiment, Investor decision making, COVID-19.*

1. Introduction

Stock markets are sensitive to the market information and this can be witnessed in the trading patterns of the investors. Unplanned occasions in the financial markets rush the adrenaline among investors. Individuals are unable to reap the benefits of diversification with the integration of financial markets and as a result, their risk betas and returns are constant in various capital markets. Sentiments play a vital role in deciding the fate of stock markets as the moment analysts get an inkling of some unusual event to strike the economy, waves of sentiments dictate the market returns. Economic repercussions of such an event or stock market crash depend more on the response of the market players rather than on the crash itself. In some instances, the overreaction to news is such that regulatory

bodies are forced to put a circuit breaker in the stock exchange, whether an upper circuit or lower circuit. A circuit breaker is a halt in trading at the stock exchanges to make people rethink the approach they adopted while trading. In other words, to calm down the overreaction of the people towards the market due to which the stock market either falls dramatically or surges unexpectedly. Apart from the fundamental and technical analysis in determining the share prices, investor's sentiment and behavior play a crucial role in the movement of stock prices.

Indian bourses have been witnessing crises for a long time which had severely impacted the sentiments and perceptions of investors. If we go down in history, crises like the Satyam scam case, dot cum bubble, financial crisis, etc. have shaken the confidence of market players. Covid-19 and its repercussions will be marked as another unusual drastic event in the history. The government of India announced a complete lockdown on March 25, 2020, due to the widespread deadly coronavirus in India. A sudden stoppage of work in all the areas of industries could be discerned. This massive step triggered a downfall of all the macroeconomic variables used to decipher the performance of any country. It was startling to observe a mammoth net outflow of foreign institutional investment in March 2020 amounting to INR 61,973 crores¹ and an approximately equivalent net inflow of domestic institutional investors in the same month. The figures are consistent with the home bias hypothesis and the intentions with which institutional investors enter a country. Domestic investors invest for a long-term purpose while foreign investors have a myopic view which leads them to exit the market on unexpected news. Often it is noticed that alien investors withdraw their money from the host

country capital markets which is consistent with the home bias hypothesis (Ke, Ng, and Wang, 2010)

With the backdrop of the role of investors' sentiment in the capital market, our study focuses on understanding the investor's decision-making through investors' sentiment which is influenced by herding behavior factors, market factors, and best game in town factors during the lockdown period.

2. Literature Review

In the recent past, behavioral finance has occupied the position of an important determinant in influencing the stock market returns. Shiller (2003) has reported his discontent over the traditional efficient market hypothesis (EMH) given by Fama (1970) and supported by Samuelson (1965) and Malkier (2003). Behavioral finance filled the void created in the financial markets originated from the concepts of EMH.

2.1 Investor sentiments during unusual events

Loewenstein (2001) observed that investment decision making of an investor is largely influenced by the positive or negative waves of perception. Baker and Wurgler (2007) have adopted a top-down approach for understanding the sentiments of investors in the stock market. They found that the most affected stocks are of low-capitalization, growth, and younger companies. Ionescu (2009) is consistent with the finding that individuals tend to mimic each other during the crisis and fear and greed are the driving forces behind it. Zouaoui et al. (2011) analyzed that sentiments bear a positive and significant impact on the likelihood of happening of crisis. This phenomenon is prominent in the countries where behavioral biases like herding and overconfidence persist. Hoffman et al. (2013)

¹ Source: FPI Net Investment Details, March 2020, NSDL website.

have analyzed investor perception during the sub-prime mortgage crisis and found that investors actively trade on the bourses. In addition to this, it was observed that risk tolerance and return expectations decreased while risk perceptions increased during the crisis which is in line with rational investor behavior. Labroo (2013) researched to examine the importance of sentiments in the Indian stock market. He found that major events like the Satyam scam case, terror attacks, and financial crisis significantly impacts investor sentiment.

Naik and Padhi (2015) traverse the relationship between investor sentiment and stock returns in the Indian bourses. They found bi-directional granger causality between excess returns in the stock market and investor sentiment. Wanjau (2018) concludes that market and individual factors serve a positive and significant association with investor sentiment. Fallahgoul (2020) documents the decrease in investor sentiment amid the outbreak of coronavirus through analyzing messages posted on StockTwits. Also, the healthcare sector and the financial sector experienced collective positive and negative sentiments respectively. Giglio et al. (2020) observed that individuals predicted a sharp decline in the market index in the short-run following the crash. But their perceptions were largely unchanged for the market index in the long-run. Bansal (2020) examines the biases of behavioral finance during the coronavirus and found that people are employing the information at its face value which is ironic as individuals need to be most cautious at the time of any crisis.

2.2 Factors influencing investor sentiment

The psychological and emotional factors behind the investor sentiments drive the trading behaviors which affect the stock market returns (P.H. & Uchil 2019). They observed that market factors highly influence the investor

sentiment following herding behavior and awareness via media. Sentiment refers to the beliefs and perceptions held by investors to invest in a particular security (Sindhu et al. 2014). Individuals have a propensity to follow informed traders during periods of precariousness. (Qin, 2012; Chang et al. 2020; Hirshleifer and Hong Teoh, 2003). The sagacious behavior of individuals is documented in the classical theory of finance whilst the absurd behavior of individuals is reported by behavioral finance (Bennet and Selvam, 2011). The same is supported by Veira and Pereira (2015) who concluded that investors swerve from rationality to irrationality of choices in the stock market. Patterson and Sharma (2007) analyzed the behavior depicted by stock investors and concluded that herding is a tendency wherein investors follow a group of people while ignoring their private information or news. This means that they underestimate their private information and follow a herd. Furthermore, Hwang and Salmon (2009) established a significant association between herding behavior and sentiments prevailing in the market.

Additionally, Ayuko (2015) found that investors follow wealthy people or a large herd of people. Al-Shboul (2012) has examined the herding behavior of Australian investors and found that they follow the trading patterns of investors belonging to developed countries. Also, he found that usually, investors herd during the market downturn and while selling the stocks. Macroeconomic factors play a crucial role in influencing investor sentiment. Factors like interest rates, GDP, inflation rate, etc. are some of the economic factors driving the sentiments and perhaps the investment decisions of an individual in the stock market. This is supported by many researchers for example; Protopapadakis (2002), Pandey and Sehgal (2016), Bennet et al. (2012), Bhar and

Malliaris (2011), Alam and Hassan (2003), and Gupta and Reid (2013).

3. Research Methodology

This study aims to analyze the sentiments running among the investors during the period of lockdown in the Indian bourses. The time frame under the study spans from the starting of the lockdown period, i.e., March 25, 2020 to May 31, 2020, which is the end date of nationwide complete lockdown. The methodology followed in the present study was to investigate the investors' decision making through investor's sentiment which is impacted by various other factors like market factors, herding behavior, and best game in town factors. Market factors indicate the macroeconomic variables describing the position of the country; herding behavior is the behavior adopted by an investor after getting influenced by the group behavior. Whereas, best game in town factors indicate that stock market is the only profitable investing platform. Structured questionnaires were floated on various platforms like Facebook, LinkedIn, investor groups formed on Telegram and Facebook, and convenience sampling was also adopted to collect the data. A total of 216 people responded to the survey out of which 131 invested in the Indian stock market during the lockdown period. The two major reasons given by the people for not investing during the lockdown period are that they don't have adequate market information and they wanted to save the money instead of investing followed by uncertain returns in the stock market. According to the Securities and Exchange Board of India, investor participation has risen about 54% higher than the last year amid the challenging times.

The collected data were analyzed through SPSS and AMOS software. Structured equation modeling was adopted in the present study. Kaiser-Meyer-Olkin (KMO) and Bartlett's test reported a value of .765 which is above 0.5 as

suggested by Malhotra and Dash (2011). This indicates that the criteria of sample adequacy have been met in the present study. Further, all the factors have an eigenvalue greater than 1.

4. Data and Analysis

The underlying theory and prior literature are guiding the principles of analyzing the association between investors' sentiment and investors' decision making. Demographic factors and behavioral factors have been used to decipher the sentiments among investors' during the complete closure of India. 80.2% of people preferred to invest in the National stock exchange (NSE) followed by 19.1% of people investing in the Bombay stock exchange (BSE). Further, 67.2% of people invested in companies with large market capitalization followed by companies having small market capitalization with good growth prospects and companies followed by reputed institutional investors. Also, highly demanded sectors during the lockdown period were analyzed. The most demanded sector was pharmaceuticals followed by consumer durables, banking and insurance, and information and technology respectively. Further, it was observed that private-sector employees were the most interested investor segment for investing in the Indian bourses followed by business people and professionals.

Three latent variables have been used as the behavioral factors to estimate the investor decision making through investor sentiments. Four indicators i.e., interest rate (MF1), exchange rate (MF2), inflation (MF3), and liquidity (MF4) are used to measure market factors (Abdullah & Hayworth, 1993; Bulmash & Trivoli, 1991; Sehgal et al., 2009); Five indicators i.e., everyone else is investing (HB1), getting rich quick philosophy (HB2), stories of successful investors (HB3), institutional trading pattern (HB4), and media coverage of the stock (HB5) are used to

measure herding behavior (Singhvi, 2001; E. Bennet et al., 2012); and two indicators i.e., no other best alternative to invest (BG1) and uncertain returns are higher than certain returns (BG2) are used to measure the best game in town factors (E. Bennet et al., 2012; Singhvi, 2001). All the indicators were measured on a five-point rating Likert Scale. Investors' decision-making is also a latent variable measured by three indicators namely did the investors trade or not (DM1), were the investors' net buyers or net sellers (DM2), and did the investors' followed their sentiments or not (DM3).

Furthermore, skewness and kurtosis indicate that the data represents normal distribution as kurtosis is below the threshold limit of 2.2 (Sposito et al. 1983) and skewness ranges between +1 and -1.

4.1 Structure equation model

Based on prior literature, investor sentiment has been measured by investor optimism (E.

Bennet et al., 2012; Singhvi, 2001; Shiller, 1991). The model anticipates that investors' decision making is impacted by investors' sentiment which in turn is influenced by market factors (MF), herding behavior (HB), and the best game in town (BG) factors.

Table 1 reports the values for construct validity and composite reliability. Cronbach's α has been computed for all the four variables namely, MF, HB, BG, and DM and it is found that .791, .763, .69, and .62 respectively are the suitable reliability estimates. To measure the construct validity, AVE (average variance extracted) for market factors was above 0.5 whereas for the rest of the factors it was less than but close to 0.5. It has been reported that if the AVE is less than 0.5 but composite reliability is higher than 0.6, then the model is adequate (Fornell and Larcker, 1981). Further, the square root of AVE's was more than the correlations obtained between the latent variables which satisfy the condition for discriminant validity.

Table 1: Validity and Reliability of latent variables

Latent variables	AVE	Square root of AVE	Cronbach's α
Market Factors	0.503	0.7092	0.791
Best Game in Town	0.476	0.6899	0.763
Herding Behavior	0.407	0.6380	0.69
Decision Making	0.486	0.6971	0.62

The method of maximum likelihood estimation has been employed to obtain better outcomes. Further, to test the model fit under SEM, absolute model fit, incremental model fit, and parsimonious model fit have been adopted in the present study.

Table 2 depicts the model adequacy. GFI, AGFI, and NFI should be more than 0.9 but the obtained results are close to 0.9 which is acceptable. Rest all the indicators of model fit are feasible and hence, it can be concluded that the structural equation model is fit. Also, modification indices have been used to make the results better.

Table 2: Model Fit

Absolute Model Fit	Incremental Model Fit	Parsimonious Model Fit
Chi square is significant at .05.	AGFI = .851	CMIN/DF = 1.405
RMSEA = .056	CFI = .932	
GFI = .898	TLI = .921	
	NFI = .805	

Note: GFI (goodness of fit index); AGFI (adjusted goodness of fit index); RMSEA (root mean square error of approximation); CFI (comparative fit index); TLI (Tucker-Lewis index); NFI (normed fit index); CMIN/DF (minimum discrepancy per degree of freedom)

5. Analysis

The results obtained from the model were quite startling. It has been observed that investors' sentiments remained low for the first few periods after the commencement of the crisis (Bandhopadhyaya, 2010). Consistent with the prior studies, a consistently low relationship

has been observed between investor's sentiment and decision making during the complete lockdown. As the sample size obtained is low, thus, bootstrapping was applied for 500 sample sizes and Table 3 reports the regression weights for the desired model.

Table 3: Regression Weights using Bootstrapping

			Estimate	Lower	Upper	P
IS	<---	BG	-.488	-1.311	.148	.256
IS	<---	MF	.354	.027	.898	.041
IS	<---	HB	.411	.017	1.321	.074
DM	<---	IS	-.279	-1.496	.038	.142
MF_4	<---	MF	.876	.549	1.341	.002
MF_3	<---	MF	.932	.673	1.292	.003
MF_2	<---	MF	1.007	.759	1.454	.004
MF_1	<---	MF	1.586	1.282	2.162	.005
BG_2	<---	BG	.872	.698	1.453	.007
BG_1	<---	BG	.890	.607	1.228	.004
HB_5	<---	HB	.785	.593	.976	.004
HB_4	<---	HB	.699	.519	.927	.001
HB_3	<---	HB	.558	.377	.728	.004
HB_2	<---	HB	.977	.833	1.229	.002
HB_1	<---	HB	.903	.669	1.185	.003
DM_1	<---	DM	.556	.187	1.776	.006
DM_2	<---	DM	.447	.105	1.338	.031
DM_3	<---	DM	1.363	.398	1.213	.001
IS_1	<---	IS	.667	.456	1.321	.004

Notes: IS- Investors' sentiment; MF- Market factors; HB- Herding behavior; BG- Best game in town, DM- Investors' decision making

It is clear from Table 3 that only market factors and herding behavior impacted the investors' sentiments significantly at 5% and 10% level of significance. Whereas, the best game in town factors were insignificant in influencing the investor sentiments during the study. Furthermore, the indicators significantly contribute to the latent variables which means that the adequate indicators have been pooled to measure an unobserved variable. Also, investors' sentiment does not affect investors' decision-making at a 5% level of significance

but is significant at a 15% level of significance. This can be interpreted in the sense that investors usually become insulated from their sentiments while taking the decisions for investment in the Indian bourses during the crisis period.

Figure 1 reports the structural equation modeling adopted in the present study along with the standardized estimates describing the relationships among the indicators and latent variables.

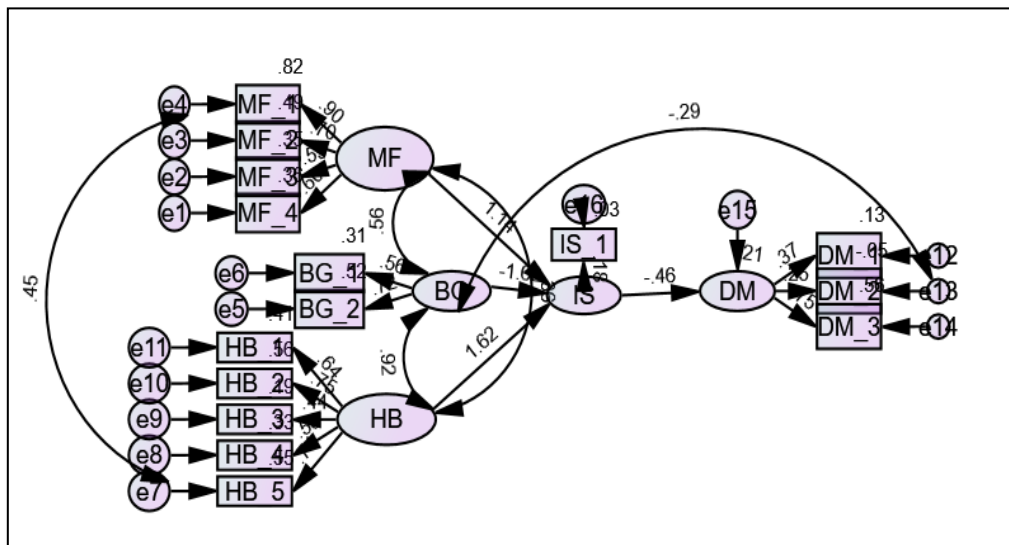


Figure 1: Measurement model and Structure model

6. Conclusion

The present study is consistent with the available literature on analyzing investment sentiments and investment decision making. Prior studies account for a strong relationship between investors' sentiments and decision making even during times of crisis (Bansal, 2020). The current study reports that investors do not follow their sentiments subject to various influencing factors. This might be because of the short-term complete lockdown announced due to COVID-19 which altered the trading behavior of the investors. The possible explanation of the investors for not chasing their sentiments may be that they want to play safe by looking at the fundamentals of the

company and don't want to indulge in speculative activities amid the already existing uncertainties.

The results show that only market factors and herding behavior influence the investors' sentiments but this does not translate into their decision making while investing. In contrast to the study by (Bandhopadhyaya, 2010), the present study does not report low investors' sentiments rather a weak relationship between investors' sentiments and their decision making is observed. In other words, investors give an upper hand to fundamentals of the company while investing in the Indian stock markets rather than the investors' sentiments during the crisis period. One important characteristic

which is portrayed about the Indian investors is that they are tranquil in the state of upheaval events which is unexpected on their part as they are contemplated to make decisions based on their own formulated sentiments leading to severe market crashes.

A gradual improvement in investment behavior is observed as the investors are reported to make informed decisions based on the fundamentals of the company. Therefore, it is concluded that though investor's sentiment is reported to play a vital role in the investment decision making in the previous studies but the present work develops a different viewpoint on the same. A sophisticated investment strategy is adopted by the Indian investors during the crisis by considering the fundamentals of the company while investing instead of the sentiments developed based on various factors.

The present study is of utmost importance to the financial advisors to gain a better understanding of the modified psychology of the investors during the crisis period. This study focuses on the association between investors' sentiments and decision making unlike the previous studies concentrating mainly on investment decision making. It is recommended to explore the investment decision making taken on the basis of investors' sentiment during the crisis period.

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