CHAPTER 6
CONCLUSION

Behavioral biases affect the clarity in thinking process and consequently lead to suboptimal decisions. Temporary successes can get into our head make us overconfident. The fear of being odd man out and then failing leads to herd behavior. The insecurity of losing a winning spree and/or the hope of gaining on a losing stock can result in disposition effect. Getting overwhelmed by bullish or bearish trends in markets can lead to excessive optimism or pessimism. All these biases make us irrational and we start making blunders. These blunders are so deep that they can impact the entire economy. Some of the examples are subprime crisis and dot com bubble. In Indian context, our stock market has seen turbulent times in the recent past. It has experienced a sharp dip in 2008 from the heights of 2006, followed by a series of ups and downs in the subsequent years, till 2013. This was the period when markets observed sharp swings in sentiments in a very short span of time [161]. Thus, a research based on investor behavior becomes relevant and interesting. The present study is an attempt in this direction. It explores the presence and impact of four behavioral biases in the Indian equity market, namely herding, optimism (pessimism), overconfidence and the disposition effect. These biases have been studied with the help of both primary and secondary data. The secondary data is taken for a period of 2006-2013 and is analyzed first.

The results reveal that herding is not present in Indian Stock market for the period of 2006 to 2013. The results of this study are in contrast to the findings of [33] and [93]. [33] detect the presence of herding in emerging economies like South Korea and Taiwan while [93] capture herding in Indian stock market for the period of 1994 to 2003. However, [93] find that the level of herding is lower in Indian stock market as compared to Chinese stock market. They suggest that low level of herding in India may be attributed to the large influence of institutional investors in Indian markets. These investors are believed to be better informed and more skilled than the individual investors. Therefore, they are less likely to herd. We delve further to explore this bias in bull and bear phases separately. The tests reveal that herd behavior is significant in bull phase, but not in bear phase. This finding is in a partial alignment with [93] who notice that herding is present in greater magnitude in bull phase. There can be several possible explanations.
for this behavior. [93] reason that positive feedback trading can be a factor behind the herd behavior during the bull phase. It can also be inferred that, during the bear phase, the market consensus might not have led to positive results for the investors due to which they discontinue to herd. Another interpretation can be that, investors in bear phase do not panic and so they do not engage in herding in order to avoid their losses. The logic that crowd can never be wrong does not hold in the case of bear phase.

The results in optimism (pessimism) bias indicate that Indian investors were predominantly pessimistic in the period 2006 to 2013. It can be linked to the crash of 2008-09 that still remains a vivid memory in the mind of investors. The market recovered, but this recovery was not sufficient to compensate the crash which occurred during the recession. This is evident by their continuous selling of Indian equities on the advent of bad news [132]. Though minor corrections occurred during this phase and subsequent periods, overall investors exhibited pessimism. The experts have also pointed out that one of the key concerns was the lack of faith on the part of both retail and institutional investors. The findings of the study are consistent with [12]. However, they gave the evidence of excessive optimism in S&P 500 for the period 2005-2009. The presence of this bias has several significant implications for the stock market. The study depicts that past volatility plays an important precursor to optimism (pessimism). It is observed that high past volatility creates a perception of unrest in the minds of investors and they become pessimistic. On the other hand, optimism is preceded by a period of low volatility. The interaction of this bias with risk premium also unfolds some very interesting insights. In an ideal situation, when investors behave rationally, the risk premium and optimism (pessimism) estimate have a negative relationship. This means that when investors are pessimistic they perceive higher risk; subsequently their return expectations and expected risk premium are also higher. Similarly, when they are optimistic their return expectations and expected risk premium have lower values. Therefore a positive relationship between risk and return is established which is consistent with traditional financial theories. However, an exact opposite interaction occurs when investors are biased. The findings show that the risk premium of biased investors (representative investors’ risk premium) has a positive relation with the optimism (pessimism) estimate. This implies that in a pessimistic scenario, the investors expect a lower risk premium, whereas the opposite
happens in an optimistic scenario. This pattern goes contrary to the rational behavior as in this case, investors are expecting a lower return in a high risk situation and vice versa. Alternatively, it can be interpreted as when investors are biased; their perceived risk return relationship is negative.

The test results of overconfidence and the disposition effect reveal that these biases prevail in the Indian equity market. The results of market wide vector autoregressions (VAR) depict the presence of overconfidence and are in conjunction with prior literature [160]. The presence and impact of both disposition effect and overconfidence are detected with the help of security wide VAR. It is seen that the effect of these two biases can be clearly segregated for 20 out of 45 companies. Moreover, overconfidence bias is present with 12 firms, the disposition effect is present with 5 firms and 3 firms are affected by both biases. This makes overconfidence bias to be predominant amongst the two. On digging deeper, it is seen that these biases affect stocks of almost all the sectors irrespective of their type or characteristic. These stocks lie under a variety of sectors which includes manufacturing, banking, infrastructure, pharmacy, information technology and telecommunications. This implies that the prevalence of these biases is not specific to any particular industry. The robustness of these results have been verified by IRF. The findings are in confirmation of [160] that transaction volume at market level increases when investors are overconfident while, it escalates at stock level due to the disposition effect. The findings suggest that the investors become overconfident when they experience high returns (gains) in past trades. Success in past trades induces the investor to overestimate their private knowledge which leads to an increase in trading activity. A market wide overconfidence for a long duration can also result in bull phase.

The disposition effect can be linked to loss aversion, regret avoidance and pride amongst Indian investors. People hold on to loss making stocks in the hope that those stocks might make a profit in future. They would like to avoid the regret which comes from realizing a losing stock. An excellent example in this context was seen when investors did not dispose of the sliding stocks in Satyam Computer Services (now, Mahindra Satyam) even after its controversial announcement of acquiring Maytas Infra and Maytas Properties in December 2008 [113]. On 7 January 2009, the stock price fell from Rs 179 to Rs 39 in a day's trading leading to a great loss in portfolio
returns of investors\textsuperscript{12}. In contrast to losing stocks, investors sell off their winning stocks early. Investors act in this manner in order to experience the pride of making a good & profitable choice. As a result the investors do not realize the complete gain, which a winning stock can deliver. Selling winners early lead to an increase in transaction volume of winning stocks (as seen in the case of HCL Technologies Ltd., Hero Motocorp Ltd., IDFC, Reliance Communications Ltd. and Kotak Mahindra Ltd.).

An example of overconfidence that can be quoted in Indian context is the Reliance Infrastructure Ltd. which is India’s one of the largest infrastructure company\textsuperscript{13}. It has a market capitalization of Rs 1, 10,000 crores and net profit of Rs 7,000 crores approximately. On January 2011, Reliance infrastructure stock was riding at Rs. 842. The company appears to be an attractive investment option with its strong portfolio in Infrastructure business which includes electricity, road projects, Metro rail projects etc. The company has also invested up to Rs. 3300 crores in special purpose vehicles of infrastructure projects. This made the investors overconfident about its success and there was a sharp increase in its transaction volume (Figure.1) in January to February 2011. However, with the end of the first quarter the revenues started declining and the company reported a loss that was due to fall in revenue from its electricity distribution business which accounts for 60 percent of company’s total revenues. The P/E ratio also fell below the industry average and by the end of March 2011; the company was in a standalone debt of 3900 crores. The share price fell down to approximately Rs. 500. During this period the transaction volume also crashed down (Figure.1). This supports our finding that when people are overconfident, there is a positive relationship between current period transaction volume and past returns.

\textsuperscript{12} Satyam case cited from (http://businesstoday.intoday.in/story/disposition-effect/1/10485.html)

It can also be said that the nature of the stocks contributes to the presence of behavioral biases. The Nifty 50 stocks come under the category of blue chip stocks which are considered to be safe and provide optimal growth opportunities. These factors contribute to investors’ overconfidence and disposition effect.

After getting an insight on impact of behavioral biases using secondary data we felt the need to further investigate this research issue using primary data. Therefore, a survey on these biases has been conducted to capture the role of investor specific factors like age, gender, annual income and trading sophistication in influencing the biases. Furthermore, it explores the psychology of respondents by identifying the situations and context in which the investors exhibit the biases. We also attempt to find out the most dominant bias. The results reveal that the behavioral biases of investors are dependent upon their demographics and trading sophistication. Further, age and trading frequency turned out to be the key determinants of behavioral biases. The results are verified with the help of chi square test. In addition to this, the investor profile corresponding to each bias has been developed. It is observed that overconfidence and optimism, mostly affects men of all ages (young to old) who trade on an intraday basis in new companies. Overconfidence in men is also cited by [6]. On the other hand, pessimism prevails in young to middle aged women. Moreover, the pessimistic respondents have a preference for old companies with high growth, derivatives and commodities market, and high grade corporate bonds, but not new companies. Additionally, herd mentality is seen mostly in old investors (51-60 years) and intraday traders who invest in new companies. These investors have
either very low experience (less than one year) or very high experience (greater than 7 years).

One of the probable reasons behind this behavior can be the investment objective which is to get a regular income. The old investors look for safer investment avenues that can supplement their pension. We find that these investors would feel extremely disappointed on losing after taking a contrarian position while their friends make profits by following the crowd. The general psychology of these investors is that they don’t mind being wrong as long as they have consensus. Thus, they become risk averse, which reduces their anxiety of losing their wealth and they tend to herd. The fourth bias is the disposition effect that affects both genders equally. Trading experience also does not create any difference in this bias. However, variation is observed with age group of investors. This bias mostly prevails in the middle age group (31-40 years) with an annual income of 6-11 lakhs. The middle aged investors are neither a risk taker like young investors, nor risk averse like their older counterparts. Additionally, they have spare money to invest. They consider themselves to be well informed and make cautious decisions. They are sure of themselves and cannot afford to be wrong. So once they take a decision they tend to stick to it even in the face of contradictory evidence. This includes holding a loss making stock for a long duration in the hope that it will become profitable in the future and/or selling the winners in their portfolio early so as to lock in their gains. This induces them to exhibit the disposition effect.

The study also captures the order of prevalence of these biases in the Indian equity market. On the basis of ranking, it is seen that overconfidence has the highest prevalence followed by optimism (pessimism) and herding while; the disposition effect has the lowest rank.

This research is an amalgamation of past and present day investor psychology. To the best of our knowledge this is one of the few comprehensive studies in the Indian context to date that combines the two approaches. Given the dearth of secondary data studies, it attempts to unveil the influence of behavioral biases on market data. Additionally, with the help of survey, this research updates and expands the psychological perspective to corroborate the existing studies.