

An empirical study on Cognitive biases affecting investment decision with special reference to Valsad District

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Abstract: Extreme volatility has plagued financial markets worldwide since the Global crises. Investors sentiments has been one of the key determinants of the market movements. Behavioral finance theories, which are based on the psychology, attempt to understand how emotions and cognitive errors influence individual investors' behaviors. The objective of this paper is to study the cognitive biases affecting investment decision of investors and the investment performance. The data are collected from the investors of Valsad district by using structured questioner and are analyzed by using various statistical tools. Results found that there exists a relationship between the cognitive biases and investment performance, and these biases have impact on the investors while making investment decisions.

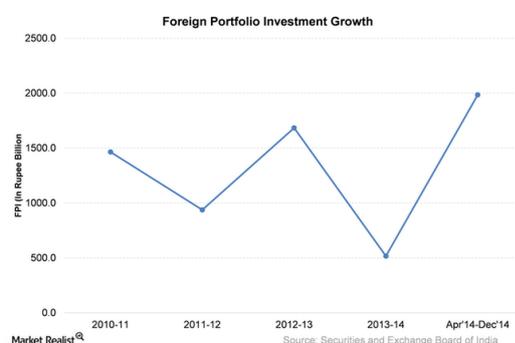
Keywords: Cognitive Bias – Belief Perseverance Bias - Information Persuasive Bias and investment performance

Introduction

The Indian economy like other major economy, get affected by global political and economic development. The fiscal year 2016 has not been upbeat for the Indian markets. The S & P BSE SENSEX which is considered as major indices have given a negative return of -3.9 % YTD (year to date) as of 15th Oct 2015, meanwhile the CNX Nifty, and other benchmark indices has also given a negative return of -3.4 % YTD.



The chart shows market capitalization of BSE & NSE for last five years as released by SEBI. There was a consistent downfall in the market capitalization of BSE & NSE for fiscal year 2011, 2012, and 2013. Although weak markets globally did have an impact on the Indian markets, the domestic business environment was adverse as well. Issues such as a series of political scams and retrospective taxation also affected the markets



The FPI (foreign portfolio investment) in a stock market refers to the net investment—that is, gross purchases minus gross sales. In fiscal 2015, Indian government took various steps like attempt to clarify the tax treatment of gain in securities market transactions as well as the retrospective tax treatment. the foreign portfolio witnessed impressive growth of about 80% in fiscal 2013 over the previous year. In fiscal 2014, the FPI fell sharply— about 69% over the previous year. It rose again by 284% in fiscal 2015.

The efficient market hypothesis (EMH) implies that stock prices should fully reflect all the information in the market. Since 1980s, many studies have raised some problems leading to over or under reaction of the market, and then imply the rejection of the efficient market hypothesis. These critics have contributed to the development of the behavioral finance theory.

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Behavioral finance seeks to combine behavioral and cognitive psychological theory with conventional economics and finance to provide explanations for why people make irrational financial decisions. Cognitive psychology and the limits to arbitrage are two building blocks of behavioral finance. Also, Investor's decision making depend on many parameters such as utility maximization, return, socioeconomic, age, education, and capital invested profession, etc. These parameters are helpful in determining the biases that arise due to the behavior of the investors.

Literature Reviews:

Chen et al, (2007) states that, the investors may be inclined toward various types of behavioral biases, which lead them to make cognitive errors. Many people may make predictable, non-optimal choices when faced with difficult and uncertain decisions because of heuristic simplification. Behavioral biases, abstractly, are defined in the same way as systematic errors are, in judgment.

Chandra (2008) quotes that, cognitive psychology should be given importance in the process of decision making as the effective decision making in the stock market requires an under-standing of human nature in a global perspective on top of financial skills.

Zindel, Zindel, and Quirino (2014) tried to demonstrate that the emergence of behavioral finance contributes to a better understanding about the decision making process. They explained that behavioral finance presents evidence that the decision making process of investors can be triggered by cognitive illusions, heuristics and cognitive biases, resulting in misleading investment decision-making, which is not based on rationality. The study tried to learn about the cognitive biases. The study explained that the knowledge about cognitive illusions that can affect the decision process allows investors to avoid mistakes in the financial decisions. Thus, knowing and letting the investors know about cognitive illusions to which they are subject is crucial for the improvement of investment allocation. It is believed that only through the systematization of information on investor behavior and the process of decision making, it will be possible to construct appropriate tools to support decision-making, which can contribute to economic efficiency in the markets.

Raut and Das (2015) studied the psychological and social patterns merging with individual's capital market investing behaviour. Through the review of various studies they observed that social factors like herding, emotional contagion, imitation and information cascades along with psychological patterns like representativeness availability and anchoring heuristics are the basic key factors that determine individual decisions. The study highlighted the common decisional errors made by investors to help the investors and portfolio managers in making their choices keeping the discussed behavioural biases in mind. The various cognitive biases were identified during the study of various literatures on behavioral finance. These cognitive biases were grouped on the basis of Belief and information to better understand the effect of these biases on the investors.

Cognitive Biases

Cognitive Biases			
Belief Perseverance Bias	Conservatism	People fail to incorporate new information by continuing to hold their prior views/forecasts.	Barberis, Shleifer and Vishny (1998), Ritter (2003), Bodie, Kane and Marcurs (2005) Alwathainani, A. (2012).
	Confirmation	people look for information that align/confirm their own beliefs and ignore contradictory information.	Das and Das, (2001), Montier (2002), (Shefrin, 2007)
	Representativeness	people rely on 'best fit' to determine categories to which new information is assigned. That is, people classify new information based on past experiences and classifications. This helps them understand new information within a frame of past experience.	Kahneman & Tversky (1972) and Tversky & Kahneman (1971, 1974, 1982a, 1982b), DeBondt & Thaler (1985), Shefrin (2000). Ritter (2003), Bloomfield and Hales(2002); Frieder(2004,2008; Kaestner (2006);Alwathainani, 2012 Waweru et Al (2008), Charness et al., (2010), Boussaidi (2013).
	Illusion of Control	people think they have more control over the outcome than they actually	LANGER, E.J. (1975), Creevy, Nicholson, Soane, & Willman

		do. That is, the subjective probability of personal success is higher than the objective probability.	(2003), Shefrin (2007), Montier (2007, 2010), (Ejova, Delfabbro & Navarro, 2009), (Thompson, 2011)
	Hindsight	results from individuals' lack of perfect memory. It refers to the tendency of people to find past events to be more predictable than they were prior to the outcomes. This is because outcomes that occurred are more evident than those that didn't. The reason why predictions are more predictable than they were is due to the fact that people are biased by their knowledge of what happened.	Fischhoff (1975), Shiller (2000), Werth, Strack, & Forster (2002), Musch (2003). Pompian (2006), Pezzo and Pezzo (2007), Vein, Biais, and Weber (2008), Monti and Legrenzi (2009), Goodwin (2010), Tchai (2012)
Information Persuasive Bias	Anchoring & Adjustment	people estimate values with reference to an original estimate (the anchor). That is, when people are asked to estimate some value, they start with some number and then adjust it up and down to reflect the new updated information. This occurs generally because relative analysis and comparison is easier than absolute one.	Slovic and Lichtenstein, (1971), Tversky and Kahneman (1974), Shefrin (2000), Shiller (2003), Bazerman (2004), Nicholas Epley and Thomas Gilovich (2006), Tseng & Yang (2011), Kahneman (2011), Campbell and Sharpe (2007), Ichiue and Yuyama (2009, JMBC), Tz-Pu, Chang (2012)
	Mental Accounting	people divide their money into different mental accounts based on arbitrary classifications and treat each account differently. The accounts can be based on different classifications such as source of money (i.e. salary, stock bonus, inheritance ... etc) or based on the use of money	Thaler (1999, 2001), (Barberis & Huang, 2001), Barberis & Thaler(2003) Ritter (2003), Ljungqvist and Wilhelm (2005), Wurgler (2006), Lerner, Small, and Loewen stein, 2004; Cryder et al., 2008) Antonides et al. (2011)
	Framing	person answers a question differently based on the way in which it is asked (framed). An individual who is given the option between two lotteries and told than lottery 1 has 60% chance of winning while lottery 2 has 40% chance of losing might select lottery 1 because of the positive way the sentence was framed.	Tversky and Kahneman (1981, 1986), Entman (1993), KAHNEMAN, D., et al., (2000), Shefrin (2000, 2002)
	Availability	people take a mental shortcut to estimate the probability of an outcome based on how easily the outcome comes to mind. Decision maker relies upon knowledge that is readily available rather than examine other alternatives or procedures.	Tversky & Kahneman (1974), Chiodo et al. (2002), Waweru et al., (2008), Lee et al,(2007), Barber & Odean (2008)

Objectives of the study

1. To study the cognitive biases affecting the investment decisions of the investors in the valsad district region.
2. To study the relation between the Belief Perseverance Bias and the investment decision taken by the investors.
3. To study the relation between the Information Persuasive Bias and the investment decision taken by the investors.

Data type and Source: In order to address the objective of the study, qualitative and quantitative type of data were gathered through primary and secondary sources.

Data Collection:

The primary data were collected from the respondents through questioners. A structure questioner was designed and distributed to the sample respondents. Primary data were used to collect information on the variables having impact on the decision making. Secondary data were gathered from the websites, research papers, articles and other sources. Questioner consists of questions related to demographic variables, cognitive biases & investment performance.

Sampling Technique:

Non Probability convenience sampling Tools used Sample Size:

145 respondents (Investors) will be selected by using Non Probability convenience sampling with the help of structured & undisguised questionnaire from Valsad District of South Gujarat

Tools of Data Analysis

Data collected will be analyzed by using software like SPSS, & statistical tools like Chi-Square, Correlation analysis, mean & Standard deviation,

Hypothesis

H0: There is no association between income and sector.

H1: There is an association between income and sector.

Income * Sector Cross tabulation

Count		Sector					Total
		Auto	banking	IT	mfg	pharma	
Income	0-2 lakhs	15	21	1	6	1	44
	2-5 lakhs	1	32	3	7	2	45
	5-10 lakhs	0	18	3	9	2	32
	more than 10	0	5	1	3	2	11
	5	0	9	1	1	2	13
Total		16	85	9	26	9	145

Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	44.433 ^a	16	.000
Likelihood Ratio	43.676	16	.000
Linear-by-Linear Association	11.204	1	.001
N of Valid Cases	145		

a. 17 cells (68.0%) have expected count less than 5. The minimum expected count is .68.

Interpretation:

Since the P-value (0.001) is less than the significance level (0.05), we cannot accept the null hypothesis. Thus, we conclude that there is an association between income and sector.

Ho: there is no correlation between Belief Perseverance Bias and investment decisions taken by the investors.

H2: There is correlation between Belief Perseverance Bias and investment decisions taken by the investors.

Descriptive Statistics

	Mean	Std. Deviation	N
Belief Perseverance Bias	3.154023	.5959376	145
Investment Decision	3.234483	.8889966	145

Correlations

		Belief Perseverance Bias	Investment Decision
Belief Perseverance Bias	Pearson Correlation	1	.378**
	Sig. (2-tailed)		.000
	N	145	145
Investment Decision	Pearson Correlation	.378**	1
	Sig. (2-tailed)	.000	
	N	145	145

** . Correlation is significant at the 0.01 level (2-tailed).

Here significance 2 tailed is less than 0.05, so Ho is rejected. We can interpret that there is a correlation between belief perseverance bias and investment decision making.

H0: There is no correlation between information Persuasive Bias and investment decisions taken by the investors.

H3: There is correlation between information Persuasive Bias and investment decisions taken by the investors.

Descriptive Statistics

	Mean	Std. Deviation	N
Information Persuasive Bias	3.351724	.6694917	145
Investment Decision	3.234483	.8889966	145

Correlations

		Information Persuasive Bias	Investment Decision
Information Persuasive Bias	Pearson Correlation	1	.553**
	Sig. (2-tailed)		.000
	N	145	145
Investment Decision	Pearson Correlation	.553**	1
	Sig. (2-tailed)	.000	
	N	145	145

** . Correlation is significant at the 0.01 level (2-tailed).

Here significance 2 tailed is less than 0.05, so Ho is rejected. We can interpret that there is a correlation between belief perseverance bias and investment decision making.

Findings

From the study of various literatures the major cognitive biases affecting investors decisions were identified. These cognitive biases were further sub divided into two categories, that is Belief Perseverance Bias and Information Persuasive Bias.

The two tailed correlation test shows that the value is less than 0.05 which shows that there exists an relationship between Belief perseverance bias and investment performance.

Similarly the results of correlation between information persuasive bias and investment performance also show a value which is less than 0.05, hence there exists an relationship.

Conclusion

The stock exchange in India has been seen lot of ups and down since many years, it has reached several heights breaking all the previous records, but the retail equity investors were not able to take the advantage of this volatility in the market. Moreover it has also been observed that the investors have started losing money in the market which has resulted in decreasing number of retail equity investors. The various studies all over the globe on investors psychology carried which shows that the investors are biased towards some psychological and emotional factors which affects their investment decision making process. In the present study based on the survey of retail equity investors in Valsad district of South Gujarat shows that the investors are influenced by the behavioural biases and there exists a relationship between the cognitive biases and investment performance. We also conclude that these cognitive biases have an effect on the investors psychology and in turn affects their investment performance.

Suggestions/ Recommendations

From the study it was concluded that the behavioural biases like cognitive biases have an impact on the investment performance of the retail equity investors, the similar factors can be taken into consideration and reviews of investors from others of Gujarat and other states of India can be taken to know to which extent these biases are associated with the investors psychology. Moreover there are more other biases available from the literature which can also be added to cover a wider perspective of the behavioural biases affecting the investors.

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