A SYSTEMATIC REVIEW ON BEHAVIORAL BIASES: A STUDY RELATED TO HERDING AND OVERCONFIDENCE.

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Abstract

Behavioral finance is a discipline that attempts to explain, how the cognitive errors (mental mistakes) and emotions of investors influence the decision making process. It focuses upon how investors interpret and act on information to make informed investment decisions. Investors do not always behave in a rational, predictable and an unbiased manner indicated by the quantitative models. Behavioral Finance places an emphasis upon investor behavior leading to various market anomalies. The researchers have recognized the presence of behavioral biases that offer a more realistic insight into the functioning of stock markets and its participants. Herding and Over Confidence are the most prevalent biases in modern time. The main objective of the paper is to review the behavioral biases, mostly covering Over Confidence and Herding biases.

Keywords: Behavioral finance, cognitive errors, mental mistakes, Confidence and Herding biases, behavioral biases.

1. INTRODUCTION

The field of finance has been dominated by the traditional finance model with the central assumption that people are rational and stock & bond markets are efficient. But, Are investors really rational? This question has been raised by various researchers in the past and suggests that investor behavior does not conform to traditional financial theories. Psychologists have found that economic decision is mostly made in an irrational manner, so they challenge this assumption The Standard Finance theories were considered to be the backbone of financial decision making. In an ideal scenario this approach is applicable, where the market is informationally efficient, i.e. the security prices would incorporate all the information available in the market, which is practically not possible.

Behavioral finance deals with the influence of psychology on the behavior of financial practitioners and its subsequent impact on stock market. In recent times, the researchers have recognized the presence of behavioral biases that offer a more realistic insight into the functioning of stock markets and its participants. These biases are broadly categorized into heuristic driven and frame dependent biases. Heuristic driven biases recognizes that financial practitioners use rules of thumb or heuristics to process data and make decisions. For instance, people believe that future performance of the stock can be best predicted by past performance. The author categorizes such biases under heuristic biases which include overconfidence, anchoring and adjustment, reinforcement learning, excessive optimism and pessimism. Frame dependent biases influence the financial practitioners by the way they frame their options. This theme includes biases like narrow framing, mental accounting and the disposition effect. The knowledge of these biases facilitates the financial practitioners in recognizing their own mistakes along with the others and assists in avoiding them. Therefore, as the market environment becomes ever challenging, investors can benefit from the insights of behavioral finance in beating the market.

2. LITERATURE REVIEW

• Ricciardi and K. Simon, (2000), studied on '***What is Behavioral Finance?*** gave a general overview of behavioral finance along with some major themes and concepts, a general overview on the concepts of over confidence, Prospect Theory, Financial Cognitive Dissonance and Theory of Regret and How Can Investors take Into Account the biases inherent in the Rules of Thumb which they often find themselves using it.

• Singh, (2010), studied on ***'Behavioral Finance Studies: Emergence and Developments'*** inorder to highlight the developments in the area of behavioral finance and the building block owingly? How Can Investors "know themselves better" so that they can develop better Rules of Thumb?

The findings were to maintain an "investment record" so that overtime it will assist an investor in evaluating investment decisions and understanding their mistakes, and controlling their "emotional impulses." It enables them to trade less and implement a simple "buy and hold" strategy.

• Kim and Nofsinger (2008), studied on ***'Behavioral finance in Asia'*** and discuss behavioral finance in general, and why behavioral finance in Asia is an important topic worth studying, even the researcher describes the papers published in this special issue, and placing the papers within the appropriate context of the growing literature on behavioral finance. The findings were the behavioral finance paradigm for explaining how agents behave and how their behavior might

affect financial and The Asian financial markets represent a fruitful testing ground for behavioral finance researchers.

- Huang, Shieh and Kao studied on '***Starting points for a new researcher in behavioral finance***'. The purpose of this paper was to systematically consolidate and analyze papers in behavioral finance in the past 20 years, and to provide an overall introduction to scholars and professionals in the industry who may be interested in behavioral finance in the future. The findings were More research papers in behavioral finance are emerging, making it a significant area of study. Most of the papers can be classified as empirical or theory. The number of papers in the review class should be increased to assist scholars and professionals in understanding behavioral finance and its application. A number of personal and institutional main contributors have been making a considerable impact on the field of behavioral finance. With the vigorous development of financial markets all around the world, more and more scholars are becoming involved in behavioral finance research.

- Broihanne, Merli and Roger, (2014), examined on ***'Overconfidence, risk perception and the risk-taking behavior of finance professionals'*** to analyse the role played by overconfidence and risk perception in the risk-taking behaviors of finance professionals. The findings were financial professionals are overconfident in both the general and the financial domains. The errors made by the professionals are related to the amplitude of their confidence interval.

- Prosad, Kapoor and Sengupta, (2012), studied on ***'An Examination of Herd Behavior: An Empirical Study on Indian Equity Market.'*** The study uses a mobile sample of Nifty50 stocks. Nifty 50 is a well diversified 50 stock index accounting for 22 sectors of Indian economy. The data consists of total returns of each constituent stock for a period of 5 years, starting from 1st April, 2006 to 31st March, 2011. The returns were taken on daily basis and downloaded from Centre for Monitoring Indian Economy (CMIE) Prowess database. The tools used regression equation. To test the presence of herding linear regression model and linear regression using quadratic functional form has been applied. Indian markets are efficient as no severe herding has been reported. However when presence of herding was tested for periods of market stress, it prevailed in bull phase.

- Jaya Mamta Prosad and SujataKapoor, '***Exploring optimism and pessimism in the Indian equity market'.*** The purpose of this paper is to capture the presence and impact of optimism in the Indian equity market. The data set comprises the daily values of the Nifty 50 index, index options and Treasury-bill index for a period of five years (2006-2011). The focus of this paper is two pronged. It first investigates the presence of optimism (pessimism) using the pricing kernel technique suggested by Barone-Adesi et al. (2012). Second, it tries to analyze the relationship of this bias with stock market indicators like risk premium, market return and volatility using time series regression.

The findings indicate that the Indian equity market has been predominantly pessimistic from the period 2006 to 2011. The interaction of this bias with market indicators also unveils some interesting insights. The study shows that high past volatility can lead to pessimism in the Indian equity market and vice versa. It further explores that when the investors are rational, their risk and return relationship is positive while it tends to be negative when they are irrational. The impact of investors' irrationalities on asset valuation has also been accounted by Brown and Cliff (2005).

• Zhou and Lai, studied on *'Herding and information based trading'*, to examine the coexistence of two types of phenomena: herding and informational cascades. With herding, people tend to crowd together with others, making identical investment decisions. This is especially common in markets having less publicly available information. The findings were herding among stocks in the HSHKCI is slightly stronger than in the Mainland Composite 2 Index (HSMLCI). Herding was stronger in 2003 than in 2004 which implies that investors herd more often at times when market sentiment is poor.

• Rajdev and Raninga, studied on, *'Gender And Heuristic Driven Biases: A Review Of Literature'.* To check reveals that men and women suffer from heuristic driven biases that include overconfidence, optimism, herding and hindsight and anchoring bias. Male investors exhibit overconfidence and are highly optimistic compared to their female counterparts. On the other side, female investors havestrong effect of herding, hindsight and anchoring bias. It is dueto their personality traits and psychological differences that results into differences in heuristics.

• Andres Bello, Jan Smolarski, GökçeSoydemir, Linda Acevedo, (2017) conducted a study on *"Investor behavior: hedge fund returns and strategies: Review of Behavioral Finance',* to investigate to what extent hedge funds are subject to irrationality in their investment decisions. The findings were the institutional irrational sentiments play a role in hedge fund returns, we note that the returns are not completely shielded against irrational trading; however, hedge fund returns appear to be affected only by the irrational component derived from institutional trading rather than that emanated from individuals.

• Todd Feldman, Gabriele Lepori**,** (2016) conducted a study entitled *"Asset price formation and behavioral biases", Review of Behavioral Finance'.* The purpose of this paper is to examine the debate on whether psychology affects asset prices using agent-based modeling. Three simulation regimes where the first regime contains fundamental investors who invest based on the mean-variance framework. The second regime includes purely irrational investors who invest based on behavioral biases. The third regime combines the two types of investors. The finding were the type of irrationality affects return properties in different ways. Irrational investors who are introspective in their irrationality, only examining their performance and deficiencies, do not have much of a systematic effect on stock returns when combined with rational investors. However, irrational investors that

aggregate information in an irrational manner have a systematic effect when combined with rational investors.

- Dash, (2016) *'Does investor sentiment as conditioning information help to explain stock returns behavior? A test of alternative asset pricing models" to* use investor sentiment (IS) as a conditioning information variable for the cross-sectional return predictability tests of alternative asset pricing models (APMs). Cross-sectional tests of alternative APMs in the linear beta representation and stochastic discount factor specifications, Fama and Macbeth and generalized method of moments techniques have been used. The Findings were IS as a conditioning information variable contains significant information for making the discount factors time varying. Model comparison test statistics suggests that among the alternative APMs, the conditional five-factor model (FFM) performs better.

- De Bondt, (1998), conducted a study on *'A portrait of the individual investor'* inorder to outline on the prior research done in the field of Behavioral Finance and to examine the process of trading stocks by small individual investors and about their equity holdings. The findings were the Fox Valley investors are overoptimistic and predicted return and predicted skewness in risk perceptions are inversely connected.

- Prosad, Kapoor and Sengupta, (2013), studied on *'Behavioral biases of Indian investors: a survey of Delhi-NCR region'* inorder to examine the presence the behavioral biases in Indian investors specifically, overconfidence, excessive optimism (pessimism), herd behavior and the disposition effect and the role of demographics and investor sophistication in influencing the biases. The findings were Overconfidence affects male of 31-60 years who, mostly invest in new companies on an intraday basis, Optimism is observed in men of 51-60 years annual income 2-4 lakhs, Herd behavior is seen in relatively old investors of age 51-60 years who invest in new companies with high growth, The disposition effect influences men and women equally, The mean responses of intraday traders and those trading with a frequency of zero to three months differ significantly from the responses of investors who trade on yearly basis or once in three years, 44.6 per cent of respondents are slightly optimistic toward the outlook of the Indian equity market.

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- Bhatt and Chauhan, (2014), examined on *'Behavioral Finance: A New Paradigm of Finance.'* inorder to identify behavioral factors which have influence on investment decision of the investor and to understand behavioral finance as new paradigm of finance and to identify various behavioral factors influencing the decision of investor in stock market. Various Behavioral Factors were: Overconfidence: Representativeness: Herding: Anchoring: Cognitive Dissonance: Regret Aversion: Mental Accounting: Hindsight: Availability Bias: Conservatism: Investors Not Always Act In A Rational Manner Due To The Cognitive And Psychological

Errors They Have To Deal With. The Behavioral Factors Are Important In Financial Markets Because They Influence The Investors Who Make The Financial Decisions.

- Obamuyi,(2013), examined on *'Factors influencing investment decisions in capital market: a study of individual investors in Nigera.'* inorder to identify and prioritise the factors influencing investment decisions of investors in the Nigerian Capital Market, Investigate the effect of socio-economic characteristics of investors on any of the most affecting factors. The findings were the most influencing factors of investors' investment decisions in the Nigerian capital market in order of importance are: (i) past performance of the company's stock, (ii) expected stock split/capital increases/bonus, (iii) dividend policy, (iv) expected corporate earnings (v) get-rich-quick. On the other hand, the five least infuencing factors include: religions, rumours, loyalty to the company's products/services, opinions of members of the family and expected losses in other investments. The socio-economic factors have significant influence statistically on the investment decisions of investors in Nigeria.

- Opreana and Tanasescu (2014), examined on *'Effects of Behavioral Finance on Emerging Capital Markets'* to investigate the factors that may explain the trading volume evolution on two emerging capital markets, Romania and Brazil. The findings were Romanian capital market, pessimistic investors have the greatest influence on the trading volume, whereas in the Brazilian capital market, the optimistic investors, influence the market activity in the largest measure these investors have considerable aversion to risk.

- Farrell and Risse, (2016), studied on *'The significance of financial self-efficacy in explaining women's personal finance behavior'* to examine whether managing one's personal finances takes more than financial knowledge and literacy: Does an individual also need a sense of self-assuredness, or 'self-belief', in their own capabilities and 'self-efficacy'. This paper examines the significance of an individual's financial self-efficacy in explaining their personal finance behavior, through the application of a psychometric instrument.

The findings were women with progressively higher FSES scores are expected to hold all three of the investment/mortgage/savings products, while women with progressively lower FSES scores are expected to hold none of these favourable financial products, yet to hold both of the debt-related products.

- Jurevicienė et. al., (2014), studied on *'Assessment of Corporate Behavioral Finance'* to analyse the research of non-professional investors' and their financial behavior in a historical-theoretical perspective, and to recognise the emotional factors on the market movements.

The findings were Behavioral finance is based on research of human and social recognition and emotional tolerance studies to identify and understand incoming economic decisions. Behavior finance examines recognition and emotional factors influence on the market changes and concentrates on the limited human rationality, explains the psychology effect on the financial activities and argues that financial phenomena can be better explained due to the fact that financial market participants are not rational and their decisions are limited. Non-professional investors' financial behavior patterns analysis allows us grasp and justify the relevance and importance of financial behavior. The main difference between traditional and behavioral finances is that the first one does not deals with the questions 'why' investor make one or another decision

- Ellen and Zwinkels (2010), examined on *'Oil price dynamics: A behavioral finance approach with heterogeneous agents'* to study the presence and relevance of heterogeneous agents on oil prices by developing a simple and stylized heterogeneous agents model that incorporated the beliefs of and interaction between two types of investors, the fundamentalists and chartists, and their relation to the real consumers and suppliers of oil. The speculators could switch between different forecasting strategies. When acting like fundamentalists, investors expect the price to mean revert to its fundamental value. In the case of the implementation of technical analysis, investors expect prces to follow destabilizing trends. The performance of the two approaches depends on their performance in the previous months.

- Sahni, studied about *'Behavioral Finance: Testing Applicability on Indian Investors'* to give a glimpse to behavioral finance, describes the background, aim and objectives of the paper. It begins with a description of standard as well as behavioral finance, which often contradicts the modern financial theories. To test the applicability of Behavioral Finance theories on Indian Investors. To study the concept of behavioral finance and various theories associated with it. To prove the loss averse nature of investor. The findings were majority of investors prefer stable returns, irrespective of the fact that they may be lower and information from companies as a basis for Fundamental Analysis has greatest importance for majority of respondents, while investing. Historical Performance and Professional's forecasts are also considered well before making investments.

- Menkhoff andNikiforow (2009), studied on *'Professionals' endorsement of behavioral finance: Does it impact their perception of markets and themselves?'* In order to understand behavioral finance patterns which are so deeply rooted in human behavior that they are difficult to overcome by learning? The researcher tests this on a target group which has undoubtedly very strong incentives to learn efficient behavior, i.e. fund managers. We split this group into endorsers and non-endorsers of behavioral finance. The findings were endorsers do behave differently from non-endorsers in the expected direction with respect to preferred information sources and investment strategies.

- Bogatyrev, S.,(2014), conducted a study on *'Testing Behavioral Asset Pricing Models on Russian Financial Market'* to examine the data of irrational deals on mergers and acquisition market in Russia and analyzing irrational behavior of the participants of Russian exchange. The study was conducted on small and medium sized businesses and the data was collected through Russia website for selling businesses 'Sell the business'. The major findings of the study were The existence of Overconfidence in Russian M&A Market. It explains why Behavioral Finance is not so popular in Russia. Model of the investor awareness: describes the over-confidence, which leads to a short-term continuation of the trend.

- Gwilym, (2010), examined on, *'Can behavioral finance models account for historical asset prices?'* by constructing a behavioral model of asset pricing in which agents choose whether to base their expectations on chartist or fundamental forecasts. I find that the model cannot be rejected as the data generating process for the FTSE All-Share Index. The implications of these two explanations are starkly different. If we accept the first then there is a source of inefficiency in equity markets, in the form of noise trader risk, and that might justify intervention in the market to mitigate that risk. If we accept the second then asset prices reflect the true riskiness of asset ownership. Unfortunately, on the basis of the present test, we cannot reject either account as the basis for the FTSE

- Meir Statman, (2008), studied on *'Countries and Culture in Behavioral Finance'* inorder to discuss the importance of behavioral finance and also discusses about the various cultural differences that may influence investor behavior and how these differences may influence the recommendations of a financial advisor. Do propensities for risk, regret, and maximization vary by country of origin? Do they vary by gender and age? Do levels of trust and happiness vary by country? And the final question is whether the differences matter if a manager is working only with clients in the United States. The findings were Men are more willing than women to take risk with their income and portfolio, and the differences are statistically significant. Men and women are about equal in their susceptibility to regret. Men score higher on maximization, but women are happier. Finally, women are less trusting than men. that people in lower income-per-capita countries are not as happy as people in higher income-per-capita countries and have a higher propensity for risk.

3. Conclusion

Behavioral finance studies how psychology influences financial market. It emphasizes that the individuals are affected by psychological factors like cognitive biases in their decision making, rather than being rational and wealth maximizing. Behavioral finance is new approach to financial markets that argues that some financial phenomena can be understood by using models where some agents are not fully rational. Behavioral Finance is relatively a new area of research, in India still a lot of work can be done in this area.

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