

## **Behavioral Finance: An Insight into Investor's Psyche**

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**Abstract:** *The field of finance, so far, has dealt with certain central paradigms derived from investor rationality, viz., portfolio allocation based on expected return and risk, risk-based asset pricing models, i.e., CAPM and other similar frameworks, the pricing of contingent claims, and the Miller-Modigliani theorem and its augmentation by the theory of agency. While these approaches revolutionized the study of finance and brought rigor into the field, many lacunae were left outstanding by the theories. For example, the traditional models had a limited role towards understanding trading volumes while focusing mostly on price data. The price data was used to compute returns, abnormal, as well as to understand the pricing phenomenon from the eyes of an efficient market researcher or to check the over or under-pricing of stocks. Though the benefits of diversification were emphasized by modern theories, individual investors often held only a few stocks in their portfolios. Finally, expected returns did not seem to vary in the cross-section only because of risk differentials across stocks. Based on the above observations, traditional finance appeared to play a limited role in understanding issues such as (i) why do individual investors trade, (ii) how do they perform, (iii) how do they choose their portfolios, and (iv) why do returns vary across stocks for reasons other than risk. Finance education in general can be more useful if it sheds specific light on active investing by addressing aspects such as (i) what mistakes to avoid while investing, and (ii) what strategies in financial markets are likely to work in terms of earning supernormal returns. Those are the main pedagogical goals of behavioral finance, which allows for explanations of financial phenomena based on non-rational behavior amongst investors. Behavioral finance — that is, finance from a broader social science perspective including psychology and sociology — is now one of the most researched areas in finance. This paper focuses on understanding the various aspects related to Behavioral finance.*

**Keywords:** *Behavioral Finance, Non-rational behavior, CAPM, Efficient Market Hypothesis, Herd Mentality*

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### **I. Introduction**

*“Financial economists have been aware for a long time that in laboratory settings, humans often make systematic mistakes and choices that cannot be explained by traditional models of choice under uncertainty.” – Paul Pfleiderer (2001).*

The relatively young field of finance has seen path-breaking researches over the recent decades with focus on various areas such as macro-economic activity and asset pricing, volatility in the markets, currency risk, corporate finance, portfolio theory, and so on. Broadly speaking, there are three sub fields to modern financial research:

- \* **Theoretical Finance**, which is the study of logical relationships among assets.
- \* **Empirical Finance**, which deals with the study of data in order to infer relationships.
- \* **Behavioral Finance**, which integrates psychology into the investment process.

Amongst these, Behavioral Finance has caught the fancy of the researchers like never before. Amos Tversky (1979), Daniel Kahneman (1979), Werner Debondt (1985), Richard Thaler (1985), and Meir Statman (2010) have contributed greatly to the behavioral finance literature. Daniel Kahneman won the 2002 Nobel Prize in Economics “for having integrated insights from psychological research into economic science, especially concerning human judgement and decision-making under uncertainty”.

Behavioral finance research focuses on (i) How investors make decisions to buy and sell securities, and (ii) How they choose between alternatives. Behavioral finance tries to discover how humans actually make decisions and form judgments (including emotions and cognitive errors), while traditional theoretical finance tries to figure out how rational investors would behave (focusing on logic). Because the market's behavior is

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impacted and determined by how individuals perceive that behavior, investor psychology and sentiment are fundamental to whether the market will rise or fall. Stock market performance and investor psychology are mutually dependent.

The investors can be of various types: Bull Investor, Bear Investor, Savers, Speculators and Specialists. A Bull Investor is an investor who expects prices to rise and so buys now for resale later. Relatively, a Bull period is a prolonged period where the investment prices rise faster than their historical average. A Bear Investor is an investor who expects prices to fall and so sells now in order to buy later at a lower price. The chances of losses are greater here as prices are continuously falling and the end is not in sight. The Savers are those people who spend the majority of their life slowly growing their “nest egg” in order to ensure a comfortable retirement. Their primary investing strategy is to hedge each of their investments with other “non-correlated” investments, and ultimately generate a consistent annual return in the range of 3-8%. Unlike Savers, Speculators choose to take control of their investments, and not rely solely on “time”. Speculators are happy to forgo the relatively low returns of a diversified portfolio in order to try to achieve the much higher returns of targeted investments. Specialists believe that the key to successful investing isn't luck but it's education and experience. The Specialist generally picks a single investing area, and becomes an expert in that area. Some Specialists deal in paper assets, some deal in real estate, and some start businesses.

## II. Literature Review

It's easy to get the impression from the literature review of on this topic that people are remarkably confused. Fair enough. Humans are, after all, humans. However, what gets far less attention are those studies that demonstrate that human fallibility isn't constant and seems to improve as we age and/or gain experience.

Bateman et al. (2010) investigated the decision making of Australians in an experiment designed to replicate the portfolio selection process for those participating in the Australian equivalent of a defined contribution plan. When looking at the entire population of subjects, researchers found that between 14 percent and 37 percent of subjects made inconsistent choices when confronted with different methods of presenting data on the available portfolio choices. However, only 5 percent of subjects in the 55-n age group did so.

Agarwal et al. (2009) looked at a far broader set of financial decisions faced by individuals and found that in 10 realms of personal finance, individuals make better decisions as they age, with the peak prowess at about 53 years. List (2003, 2011) has focused not on age, but experience. He's demonstrated how individuals are subject to the endowment effect when entering a market for the first time, but through repeated exposure to the market, substantially reduce the impact of the effect as they gain experience.

The behavioral finance field grew up in a world where the prevailing academic assumption was that people, as a group, behave rationally. The assumption of rationality is a strong one and, over the decades, many studies have demonstrated both experimental and real-world evidence of violations of strictly rational behavior. Fair enough, people aren't fully rational, but it's dangerous to leap to the other extreme that people are utterly irrational. The Bateman study mentioned earlier is a relevant example. Depending on what model of rationality one uses, between 14 percent and 37 percent of people exhibited inconsistent risk preferences. However, between 63 percent and 86 percent got it right.

Another example is from Barber and Odean (2004) who investigated how tax efficient individuals are when they invest. Not surprisingly, the results are a mixed bag. Investors tend to hold tax inefficient assets in tax-deferred accounts, and they practice some tax-loss harvesting. However, they aren't perfect and could do a better job. The bottom line is that we need to move away from a discussion where people are or aren't rational and toward the admittedly messier, but more realistic terrain where people reside somewhere on a continuum.

### Genesis of Behavioral Finance: Anomalies

Richard Thaler gained some attention in the field of economics for publishing a regular column in the Journal of Economic Perspectives from 1987 to 1990 titled *Anomalies*, in which he documented individual instances of economic behavior that seemed to violate traditional microeconomic theory. His recurrent theme was that market-based approaches were incomplete: he was quoted as saying “conventional economics assumes that people are highly-rational – super-rational – and unemotional. They can calculate like a computer and have no self-control problems.” The presence of regularly occurring anomalies in conventional economic theory was a big contributor to the growth of behavioral finance as a discipline. These so-called anomalies, and their continued existence, directly violate modern financial and economic theories, which assume rational and logical behavior. The following is a summary of some of the anomalies found in the financial literature.

**January Effect:** The January effect is named after the phenomenon in which the average monthly return for small firms is consistently higher in January than any other month of the year. This is at odds with the efficient market hypothesis, which predicts that stocks should move at a "random walk".

**The Winner's Curse:** One assumption found in finance and economics is that investors and traders are rational enough to be aware of the true value of some asset and will bid or pay accordingly. However, anomalies such as the winner's curse - a tendency for the winning bid in an auction setting to exceed the intrinsic value of the item purchased - suggest that this is not the case.

**Equity Premium Puzzle:** An anomaly that has left academics in finance and economics scratching their heads is the equity premium puzzle. According to the capital asset pricing model (CAPM), investors that hold riskier financial assets should be compensated with higher rates of returns. Studies have shown that over a 70-year period, stocks yield average returns that exceed government bond returns by 6-7%. Stock real returns are 10%, whereas bond real returns are 3%. However, academics believe that an equity premium of 6% is extremely large and would imply that stocks are considerably risky to hold over bonds. Conventional economic models have determined that this premium should be much lower. This lack of convergence between theoretical models and empirical results represents a stumbling block for academics to explain why the equity premium is so large.

Conventional financial theory does not account for all situations that happen in the real world. This is not to say that conventional theory is not valuable, but rather that the addition of behavioral finance can further clarify how the financial markets work.

### **Behavioral Finance Traits**

There are many concepts which characterize the behavioural finance. Such traits which are observed in the behavior of investors are enumerated as under:

**Loss Aversion:** Investors do not like losses and often engage in mental gymnastics to reduce their psychological impact. Loss aversion reflects the tendency for people to weigh losses significantly more heavily than gains. Loss aversion can be observed in our tendency, when faced with a choice between a sure loss and an uncertain gamble, to gamble unless the odds are strongly against us. Their tendency to sell a winning stock rather than a losing stock is called the disposition effect in some of the behavioral finance literature. Shefrin and Statman (1985) coined the term disposition effect, as shorthand for the predisposition toward get-even.

**Fear Of Regret:** Investors do not like to make mistakes. People tend to feel sorrow and grief after having made an error in judgment. This trait makes people slow to act (or unable to decide). One theory is that investors avoid selling stocks that have gone down in order to avoid the pain and regret of having made a bad investment.

**Myopic Loss Aversion:** Investors have a tendency to assign too much importance to routine daily fluctuations in the market. (i.e. be shortsighted). Abandoning a long-term investment program because of normal market behavior is sub optimal behavior. Checking on investment portfolio frequently can lead to loss of discipline in adherence to a well thought out long term investment plan and lead to buy high and sell low trading.

**Herding:** Herding refers to the lemming-like (a propensity to follow blindly after a leader) behavior of investors and analysts looking around, seeing what each other is doing, and heading in that direction. Herding reflects the feeling of safety and well-being by behaving in harmony with the group. As many recent financial disasters show, there may not have been safety in numbers, but there probably was some comfort in them. As someone probably said: "I lost money but at least I had company".

**Anchoring:** Reflects the use of irrelevant information as a reference for evaluating or estimating some unknown value or information. When anchoring, people base decisions or estimates on events or values that are known to them, even though these facts may have no bearing on the actual event or values. In the context of investing, investors will tend to hang on to losing investments by waiting for the investment to "break even" with the price at which it was purchased. Thus, these investors anchor the value of their investment to the value it once had, even though it has no relevance to its current valuation.

**Illusion Of Control:** Refers to people's belief that they have influence over the outcome of uncontrollable events.

**Prospect Theory:** Risk averse investors get increasing utility from higher levels of wealth, but at a decreasing rate. Kahneman and Tversky (1979) showed that while risk aversion may accurately describe investor behavior with gains, investors often show risk seeking behavior when they face a loss. "I can't quit now, I am too far down". This has the implication that money managers may take bigger chances when things have not gone their way in an attempt to recover the losses.

**Mental Accounting:** Mental accounting refers to our tendency to "put things in boxes" and track them individually. For example, investors tend to differentiate between dividend and capital (gain), and between realized and unrealized gains. To give an example, the practice of buying dividend-paying stocks so that one can avoid "dipping into capital" - selling stock - to pay for life's necessities.

**Asset Segregation:** Asset segregation refers to our tendency to look at investment decisions individually rather than as part of a group. The portfolio may be up handsomely for the reporting period, but the investor will still be concerned about the individual holdings that did not perform well.

**Hindsight Bias:** Hindsight bias refers to our tendency to remember positive outcomes and repress negative outcomes. Investors remember when their pet trading strategy turned up roses, but do not dwell on the numerous times the strategy failed.

**Overconfidence:** Overconfidence refers to our tendency to believe that certain things are more likely than they really are. For example, most investors think they are above-average stock pickers. Money managers, advisors, and investors are consistently overconfident in their ability to outperform the market, however, most fail to do so.

**Framing:** The concept of framing involves attempts to overlay a situation with an implied sense of gain or loss. It is easier to pay Rs.3,400 for something that you expected to cost Rs.3,300 than it is to pay Rs.100 for something you expected to be free. Though the economic impact is Rs.100 for both the cases. According to Daniel Kahneman (1979), "A loss seems less painful when it is an increment to a larger loss than when it is considered alone."

**Availability Heuristic:** The availability heuristic is the contention that things that are easier to remember are thought to be more common.

**Illusion of Truth:** People tend to believe things that are easier to understand more readily than things that are more complicated. Most investors prefer a low PE ratio, since they prefer to buy low-priced stocks with high earnings, and this idea is easy to understand. Some people believe that stock splits and cash dividends are wealth-enhancing events, even when we know that these corporate events do not affect shareholder wealth at all.

**Biased Expectations:** Our prior experience causes us to anticipate certain relationships or characteristics that may not apply outside our frame of reference. For example, a stock in US may sell at a price of \$2.15 and the investor in US may infer that it is a risky, young company, that pays no dividends. However, comparing with India, a lot of established and large companies trade at an equivalent dollar price of \$2.15 (Rs.133) or so.

**Reference Dependence:** "That stock was Rs.800 last year, now it's trading at Rs.200 - so it's got to be cheap." This is known as reference dependence, and it's the tendency to focus on some point of reference. Investment decisions seem to be affected by an investor's reference point. If a certain stock was once trading for Rs.200, then dropped to Rs.50 and finally recovered to Rs.100, the investor's propensity to increase holdings of this stock will depend on whether the previous purchase was made at Rs.200 or Rs.50.

**Role of Mistaken Statistics:** There are some other tendencies that may have a behavioral influence on asset values. These involve "innumeracy" or a misunderstanding of the likelihood of an event or series of events. Some of these are:

(a) **Extrapolation:** We have a tendency to assume that the past will repeat itself and to give too much weight to recent experience. Some investors believe that because a stock has risen in the past recently it will

continue doing so in the future. A belief that recent occurrences influence the next outcome in a sequence of independent events is known as the gambler's fallacy.

- (b) **Percentages Versus Numbers:** Many people process numbers and percentages differently. For example, consider the following two statements about rise in incident of a disease:

Version A: The incidence of a disease rose 30%

Version B: The incidence of a disease rose from 10 in a million to 13 in a million

We would likely find that to many people, 3 more cases is not a cause for concern, although a 30% increase is.

- (c) **Sample Size:** There are many instances where people draw incorrect inferences from statistical data. Small sample problem: Thinking that a few observations can lead towards a meaningful inference, when it may not mean anything. The mistake is compounded when the sample is biased. Even in large samples, statistical significance does not mean that it is important or interesting.
- (d) **Apparent Order:** A single occurrence of an unlikely event becomes much more likely as the sample size increases. However, many people will find a run of six consecutive numbers in a daily state lottery extremely unlikely. There is nothing special about outcomes that have an "apparent order".
- (e) **Regression to the Mean:** The regression to the mean concept states that given a series of random, independent data observations, an unusual occurrence tends to be followed by a more ordinary event. Investments Interpretation: Good performance tends to be followed by lesser results. Hence, chasing last year's mutual fund or stock with the best performance is likely to be a losing strategy, although many investors do precisely this.

### III. Conclusion

Numerous money managers have created money management strategies designed to exploit various behavioral anomalies. It would be interesting to see whether managers who have tried to exploit these anomalies under real-world conditions have better success than managers who employ more traditional techniques. More importantly, even if these managers are identifying exploitable efficiencies, are they able to exploit these inefficiencies in a cost effective fashion that leaves something on the table for their shareholders?

The future is bright for behavioral finance. Simply too many instances exist in which a behavioral perspective on economics and finance is providing important insights. As a result, Richard Thaler will one day get his wish and the field will be fully integrated into the mainstream.

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