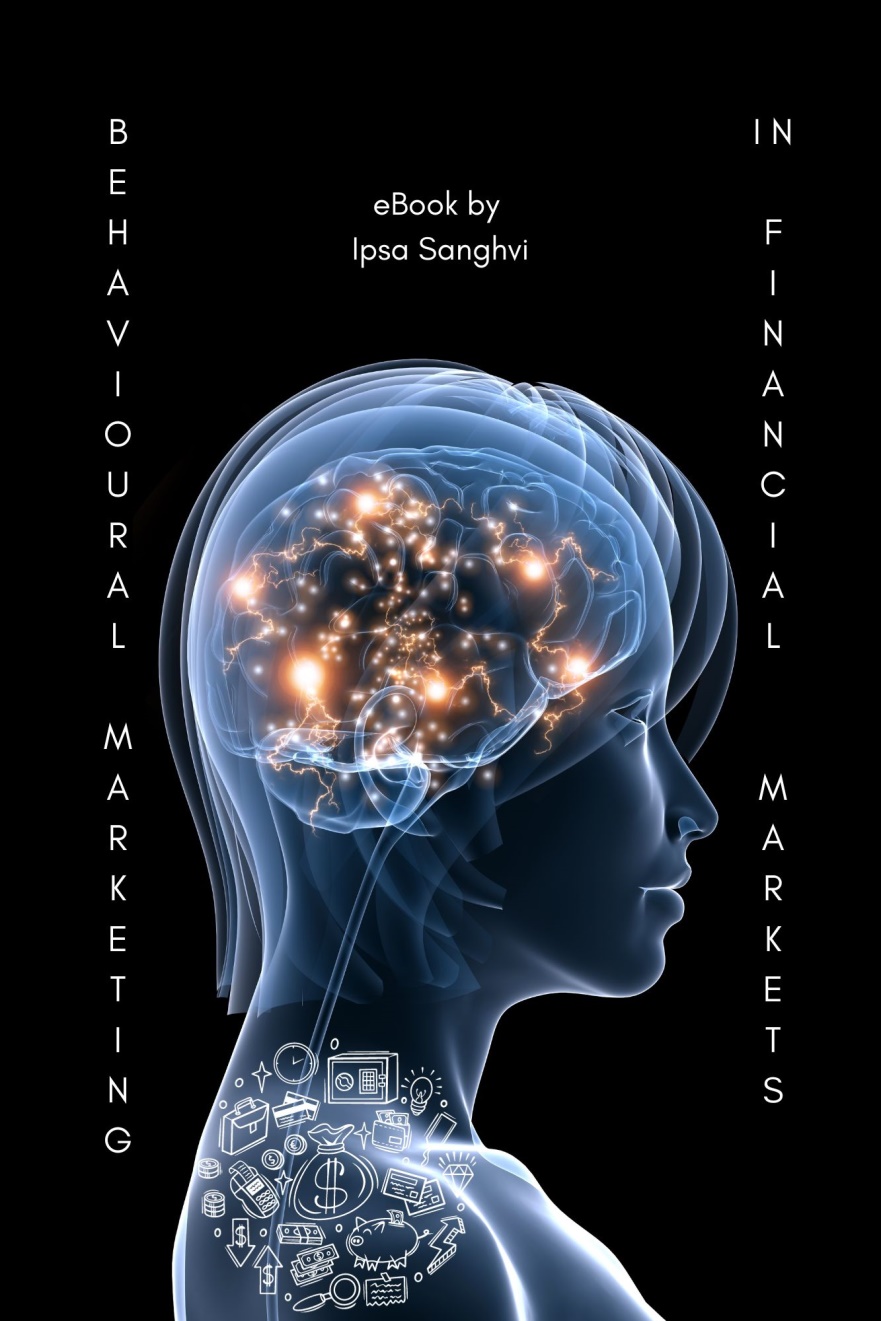
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# Preface

Welcome to the enthralling intersection of human behaviour and the world of financial markets. In the complex realm of finance, where numbers and algorithms often take centre stage, understanding the role of human psychology is both a challenging and rewarding endeavour.

This book delves into the captivating field of behavioural science as it applies to decision making in the financial markets from the perspective of investments, portfolio management, asset allocation and marketing of financial products, offering readers a comprehensive exploration of the intricate interplay between the rational and emotional facets of financial choices.



In the ever-evolving landscape of financial markets, success is not solely determined by one's ability to analyse data and predict market trends. The key variable lies in decoding the behavioural patterns that underpin investor decisions, market dynamics, and the myriad factors influencing financial outcomes. This book aims to unravel the mysteries of why individuals and groups make certain choices, often deviating from traditional economic models based on rational decision-making.

As we embark on this journey through the world of behavioural science in financial markets, we'll encounter a diverse array of topics, ranging from cognitive biases and emotional influences to marketing strategies, market bubbles and the impact of social dynamics on financial businesses. By blending insights from psychology, economics, marketing and finance, we aim to provide a holistic understanding of the forces shaping financial decisions and, consequently, portfolio management.

Through real-world examples, case studies, and practical insights, this book is designed to bridge the gap between theory and application in behavioural marketing. It is intended for entrants and experts both in the financial markets, and anyone from other sectors who are intrigued by the human side of finance. Whether you are a novice navigating the markets with no academic experience or someone with sound academic knowledge of finance, the knowledge within this book will empower you to make more informed and mindful decisions in the face of uncertainty and assist in your career or personal development objectives.



Our journey into the depths of behavioural science in financial markets is both an exploration and a guide—an exploration of the intricacies of consumer behaviour that influence financial markets and a guide for navigating these waters with a heightened awareness of the psychological factors at play. As you turn the pages of this book, may you find not only valuable insights into the behavioural aspects of investing and marketing but also a renewed appreciation for the complexity of the human mind in the realm of finance.

This book also contains results of a survey carried out by the Author on behavioural marketing. Happy reading and may your journey be both enlightening and prosperous.

# About the Author

Ipsa is a business manager, content writer, blogger, digital marketer, active investor in financial markets. She has been passionate about behavioural science at a young age of 15 years when she took the first course on behavioural economics which shaped her academic career, where after she implemented her learnings in active investing in the equity, debt and alternatives including derivatives market.

She completed her bachelor in economics from the University of London for a programme of study under the academic direction of The London School of Economics and Political Science. Thereafter, she completed her Masters in e-Business Management with the University of Warwick in the United Kingdom.

Furthermore, Ipsa has completed a residential course on Behavioural Economics with the University of Warwick in the United Kingdom and in her internship at one of the largest retail broker dealers in India, she spent time in their dealing room in the Bombay Stock Exchange where she completed a survey and research project on target audience for cross sell using behavioural science.

She is a beacon of youthful creativity, has fearlessly ventured into the world of tech start-ups at a tender age of 15 years and worked for tech start-ups. In these pages, readers will encounter not just a story, but the authentic reflections of a first-time author navigating the labyrinth of imagination and expression with on the ground survey done by the author on behavioural marketing in financial markets. It's a journey that resonates with the zeal of discovery and the courage to articulate ideas that have long percolated within the author's mind.

It's not merely about being a first-time author; it's about the spirit of innovation and the courage to transcribe one's thoughts into a form that can be shared, critiqued, and celebrated by a wider audience. Ipsa invites readers to embark on this literary journey together, where the exchange between writer and reader becomes a symbiotic dance, each step revealing more layers of the narrative tapestry.

The author invites feedback on the book to her email id: ipsa@zetheta.com

# Author’s Note

Dear Reader,

As I reflect upon the pages you now hold in your hands, I am filled with gratitude and excitement to share with you the culmination of a profound journey into the fascinating world of behavioural science in financial markets.

My exploration into the realms of behavioural science is a venture into the recesses of our minds to unravel the mysteries behind our financial choices. From the subtle nuances of cognitive biases to the emotional undercurrents that sway market dynamics, this book seeks to demystify the human side of financial decision-making.

It is crucial to recognise that the journey through the chapters ahead is not a prescription for success, but rather an invitation to introspection and a deeper comprehension of the multifaceted nature of financial decision-making. We are all participants in the grand experiment of the markets, and by understanding the behavioural quirks that define us; we can navigate this landscape with a newfound wisdom.

I extend my heartfelt thanks to all those who have been a part of this expedition—my family, my employer-Zetheta Algorithms Private Limited (“ZeTheta”), my colleagues, my family, all the authors and publishers of the reference material mentioned in the bibliography and, most importantly, readers like yourself.

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# Chapter 1:

# Literature Review and Conceptual Framework

Investment bias in business is a psychological process in which an investor decides, based on his or her predetermined idea of what will or will not work, without considering the evidence. Prejudice can also force them to retain property for longer or behave against best interests.

Smart investors avoid two big types of bias: emotional bias and cognitive bias. Controlling these biases may make it possible for the investor to reach an unbiased decision based on the data available. It is impossible for most people to be impartial in making investment decisions. Although investors can reduce bias based on understanding and identification, they often then create trading and investment rules that help reduce bias.

Broadly, investment biases fall into two main categories: cognitive and emotional. Both biases are usually the result of an inclination to choose one thing over another.



The neoclassical approach to analysing human behaviour is to assume that individuals act as if they were homines oeconomici that always seek to maximise their utility and follow their ‘true’ preferences. Also individuals are perfectly informed and act rationally, consistently and purposefully in order to maximise their net gains (Kirchgassner, 2008). The Efficient market hypothesis (EMH) theory is based on the assumption of investor’s rationality. Fama (1970) asserts that stock prices quickly and correctly adjust to the new information hence no investor can generate abnormal returns. But, in practice, many investors trade excessively, buy stock with recommendation of others, and ignore fundamental value, indicating irrational behaviour in the marketplace (Tversky & Kahneman, 1974).

Standard finance dates back to the late 1950s and early 1960s. In the year 1961, Merton Miller and Franco Modigliani characterised investors as rational. Eugene Fama described the markets as efficient in the year 1965. Harry Markowitz prescribed the rules of mean-variance portfolio theory in its basic form in the year 1952 and in its expanded version in the year 1959. William Sharpe developed the capital asset pricing model in the year 1964, which postulates that the expected returns are a function of risk (measured by beta) and risk alone.

Behavioural finance offered an alternative. According to behavioural finance:

* Investors are not rational.
* Markets are characterised by inefficiencies, even if it is difficult to beat them.
* Investors design their portfolios according to behavioural portfolio theory, not mean variance portfolio theory.
* Expected returns follow behavioural asset pricing theory in which expected returns are determined by factors other than beta.

Science advances through the interplay of theory and empirical work. Academic finance, including behavioural finance, works the same way. The tools of observation in behavioural finance are eclectic. The data may be gathered through surveys, or generated from controlled experiments in the laboratory, or may be occurring naturally.

Over a period of time it is a settled view that behavioural finance is meant to supplement, rather than supplant, rational finance. The concepts and techniques of rational finance are extremely useful for corporate managers, investors, investment advisers/ managers and others in their financial decision-making. However, when the findings of empirical research are inconsistent with the tenets of conventional theory, new theory gets developed, which typically builds on the existing knowledge. Thus, behavioural findings will shape the development of the new conventional theory. This makes behavioural finance an exciting new field.

As Werner De Bondt commented on behavioural approach: “Research methods are mainly inductive not deductive. We collect facts based on experiments, or questionnaires, or observation—and we organize them into a smaller number of superfacts. One might say we draw maps.”

There are five central themes of behavioural finance:

* Personality Traits,
* Heuristics,
* Cognitive and Emotional biases,
* Frame dependence and
* Inefficient markets.

This book gives critical perspectives on each of them in the next chapters. The latest research in behavioural economics has demonstrated that people's judgements and decisions are often subject to systematic biases, and their personality traits which are gaining importance in Behavioural Science.

# Chapter 2:

# Personality traits

American psychologist Lewis Goldberg may be the most prominent researcher in the field of personality psychology. His ground-breaking work whittled down Raymond Cattell’s 16 “fundamental factors” of personality into five primary factors, similar to the five factors found by fellow psychology researchers in the 1960s.

The five ‘**OCEAN**’ factors Goldberg identified as primary factors of personality are:

* Openness to experience
* Conscientiousness
* Extroversion
* Agreeableness
* Neuroticism

The Big Five theory still holds sway as the prevailing theory of personality, but some salient aspects of current personality research include:

* Conceptualising traits on a spectrum instead of as dichotomous variables;
* Contextualising personality traits (exploring how personality shifts based on environment and time);
* Emphasising the biological bases of personality and behaviour.

Since the Big Five is still the most mainstream and widely accepted framework for personality, the rest of this paper will be based on this framework.

The five ‘**OCEAN**’ factors are explained here.

### Openness to Experience

**Openness** describes a person’s tendency to think in abstract, complex ways. An individual who is high in openness to experience is likely someone who has a love of learning, enjoys the arts, engages in a creative career or hobby, and likes meeting new people (Lebowits, 2016a). An individual who is low in openness to experience probably prefers routine over variety, sticks to what he or she knows, and prefers less abstract arts and entertainment.



Openness to experience is perhaps the trait that is least likely to change over time, and perhaps most likely to help an individual grow. Those high in openness to experience should capitalise on their advantage and explore the world, themselves, go for intellectual pursuits and their passions. These individuals make strong and creative leaders and are most likely to come up with the next big innovation. The low scorers tend to be practical, conventional, and focused on the concrete. They tend to avoid the unknown and follow traditional ways.

### Conscientiousness

**Conscientiousness** is a trait that can be described as the tendency to control impulses and act in socially acceptable ways, behaviours that facilitate goal-directed behaviour (John & Srivastava, 1999). Conscientious people excel in their ability to delay gratification, work within the rules, and plan and organise effectively. They are likely to be successful in school and in their careers, to excel in leadership positions, and to doggedly pursue their goals with determination and forethought (Lebowits, 2016a). They are also likely to value order, duty, achievement, and self-discipline, and they consciously practice deliberation and work toward increased competence (Roccas, Sagiv, Schwarts, & Knafo, 2002).

The concept of Conscientiousness focuses on a dilemma we all face: shall I do what feels good now, or instead do what is less fun but will pay off in the future? Some people are more likely to choose fun in the moment, and thus are low in Conscientiousness. Others are more likely to work doggedly toward their goals, and thus are high in this trait.

### Extroversion

**Extroversion** describes a person’s inclination to seek stimulation from the outside world, especially in the form of attention from other people. Extroverts engage actively with others to earn friendship, admiration, power, status, excitement, and romance. Over a lifetime, high extroversion correlates positively with a high income, conservative political attitudes, early life adjustment to challenges, and social relationships (Solds & Vaillant, 1999).

Extroversion seems to be related to the emotional payoff that a person gets from achieving a goal. While everyone experiences victories in life, it seems that extroverts are especially thrilled by these victories, especially when they earn the attention of others. In contrast, introverts do not experience as much of a “high” from social achievements. They tend to be more content with simple, quiet lives, and rarely seek attention from others.

In general, extroverts draw energy from or recharge by interacting with others, while introverts get tired from interacting with others and replenish their energy with solitude.

### Agreeableness

**Agreeableness** is a person’s tendency to put others’ needs ahead of their own, and to cooperate rather than compete with others. People high in agreeableness tend to be well-liked, respected, and sensitive to the needs of others. They likely have few enemies and are affectionate to their friends and loved ones, as well as sympathetic to the plights of strangers (Lebowits, 2016a). They are also more likely to have positive peer and family relationships, model gratitude and forgiveness, attain desired jobs, live long lives, experience relationship satisfaction, and volunteer in their communities (Oser & Benet-Martines, 2006).

Agreeable individuals tend to value benevolence, tradition, and conformity while avoiding placing too much importance on power, achievement, or the pursuit of selfish pleasures (Roccas, Sagiv, Schwarts, & Knafo, 2002).

People on the low end of the agreeableness spectrum are less likely to be trusted and liked by others. They tend to be callous, blunt, rude, ill-tempered, antagonistic, and sarcastic.

### Neuroticism

**Neuroticism** is not a factor of meanness or incompetence, but one of confidence and being comfortable. It encompasses one’s emotional stability and general temper. Neuroticism describes a person’s tendency to experience negative emotions, including fear, sadness, anxiety, guilt, and shame. It includes those with obsessive compulsive disorder. While everyone experiences these emotions from time to time, some people are more prone to them than others. Those high in neuroticism are generally prone to anxiety, sadness, worry, and low self-esteem. They may be temperamental or easily angered and tend to be self-conscious and unsure of themselves (Lebowits, 2016a).

High Neuroticism scorers are more likely to react to a situation with fear, anger, sadness, and the like. Low Neuroticism scorers are more likely to brush off their misfortune and move on. Individuals who score on the low end of neuroticism are more likely to feel confident, sure of themselves, and adventurous. They may also be brave and unencumbered by worry or self-doubt.



Neuroticism has been found to correlate negatively with self-esteem and general self-efficacy, as well as with an internal locus of control (feeling like one has control over his or her own life) (Judge, Eres, Bono, & Thoresen, 2002). In fact, these four traits are so closely related that they may fall under one umbrella construct.

Neuroticism was found to correlate somewhat with agreeableness and conscientiousness negatively, in addition to a weak, negative relationship with extroversion and openness to experience (Ones, Viswevaran, & Reiss, 1996).

The assumption that investors are always rational has become a debate over traditional financial theory which cannot provide a sufficient explanation of financial market anomalies. Under certain conditions investors can ignore fundamental judgments and be attracted to securities that are actually rising at an unreasonable price. The traditional financial theory is based on four assumptions:

1. Rational Investors
2. Efficient Market
3. Investors design their portfolios according to the mean variance portfolio rule
4. The expected return is based on a function of the risk itself.

The field of behavioural finance offers an alternative to these four bases. Usually investors are often irrational, markets are inefficient, investors do not design portfolios according to the mean variance portfolio rule, and expected returns are measured not only based on risk. Behavioural finance emerged as a branch of social psychology that captures the human side of decision making. There are psychological factors that can affect the investment and the results to be achieved. Accordingly behavioural finance is a study that studies aspects of psychology that can affect financial attitudes.

The first assumption in behavioural finance is that investors will minimize expectation of regret (regret). The second, behavioural finance theory is a positive theory that describes what has happened (ex post). Third, investors are loss averse in line with prospect theory. Prospect theory explains that investors will become risk averse if they are experiencing profits and vice versa will become risk takers if they experience losses. Fourth, investors' predictions are often biased because of errors in processing information. Fifth, investors try to get satisfying returns. Sixth, investors are assumed to make decisions related to emotional, social, and psychological issues.

# Chapter 3:

# Heuristics

Heuristics are commonly defined as cognitive shortcuts or rules of thumb, which makes decision making easier, especially in complex and uncertain environments (Ritter, 2003, p.431); as opposed to a thorough information gathering and analysis, by reducing the complexity of assessing probabilities and predicting values to simpler judgments (Kahneman & Tversky, 1974, p.1124).



According to Tverysky & Kahneman:

* People evaluate the attractiveness of an alternative based not on its objective, or actual, value but on its subjective, or perceived, value.
* Consumers evaluate new products or investments relative to a reference point, usually the products they already own or consume.
* People view any improvements relative to this reference point as gains and treat all shortcomings as losses.
* Most important, losses have a far greater impact on people than similarly sized gains, a phenomenon that they coined “loss aversion.”

In this book, we combine the study of certain Cognitive Bias with emotional biases and few classes of heuristics in decision making.

# Chapter 4:

# Emotional and Cognitive Biases

Psychologists and experts from various other fields have identified a wide range of cognitive and emotional biases and each of them influences decision making in a different way. By using the behavioural tools one can create better product placement, send influential marketing messages and have a stronger impact on the buying choices of the target client audiences.

We all have strongly-ingrained biases that exist deep within our psyche. While they can serve us well in our day-to-day lives, they can have the opposite effect with investing. Behavioural biases in investment decision making encompass both cognitive and emotional biases. While cognitive biases stem from statistical, information processing, or memory errors, an emotional bias stems from impulse or intuition and results in action based on feelings instead of facts.

Warren Buffett became one of the most successful investors in the world by opposing the beneficial effect. Like confirmation bias, investors find it better to invest by walking with the crowd. But Buffett has proven that after a whole lot of research, a different mind-set than a crowd can prove more profitable.

Emotional biases are involved in investor psychology and overcoming these can usually be harder than cognitive biases. Emotional biases are not always errors. In some cases, an investor's emotional bias may help them make more protective and appropriate decisions for themselves. For the purposes of this book to keep it simple and avoid technicalities between these biases, we combine both emotional biases and cognitive biases together into cognitive biases.

A new acronym for the Big Eight Cognitive and Emotional Biases that can distort thinking and are the most relevant for marketing professionals used here is SHAMBLES and briefly explained in this book.

### Support/ Conﬁrmation Bias

**Confirmation Bias** involves favouring information that conforms to your existing beliefs and discounting evidence that does not conform. Confirmation bias is where people seek, interpret and remember information in a way that confirms their existing ideas. Essentially, people hear what they want to hear and no matter how impartial someone thinks they are, they’re going to favour information that supports what they already believe or want to be true.



Let’s say someone has just bought one of your products. They’ve decided to buy from you, handed over their precious cash and they want feel like it was money well spent. This is the post-sale period where customers want to justify their purchase – not only to get their money’s worth but also protect their ego from admitting they make a bad choice. The strength of many of history’s most accomplished scientists and mathematicians has been their ability to overcome their confirmation bias and to see all sides of a problem. Carl Jacobi, the famous 19th century mathematician, said: “Invert, always invert.”

Examples:

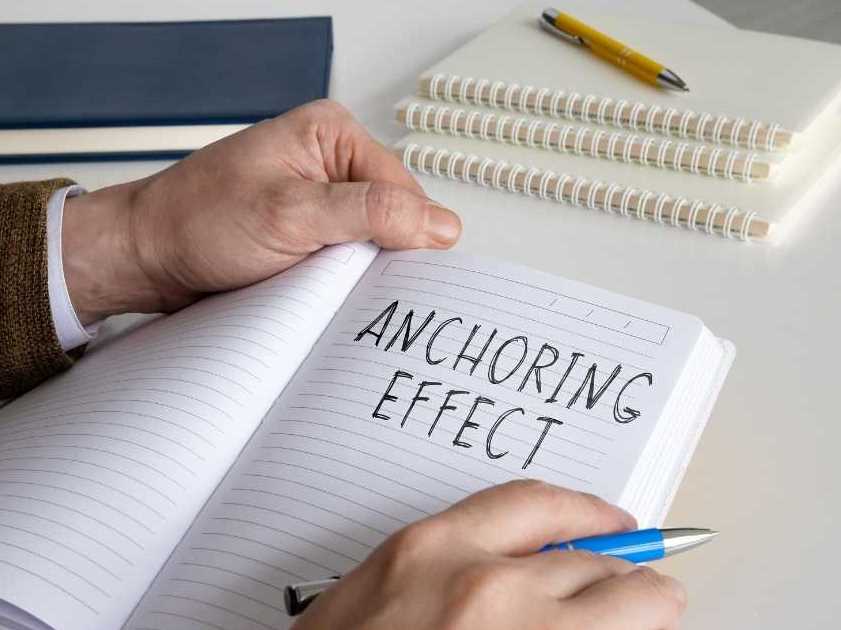
1. An investor gets a news or information about a stock and its potential to move up in the short term. From then on he/ she will be looking for information to prove this point of view, and he/ she may unconsciously or wilfully ignore any news or information against this. Hence, he/ she will collect more such positive supporting information and then even go ahead and invest in that stock.
2. An investor who might have bought a stock which had fallen heavily and sitting on huge losses will also look for positive news and information about the company, just to support his decision to hold on to the investment to sell at a profit in the future. Eventually, the stock may not go up at all and still the investor will search for some good news somewhere to support his decision to hold the stock.

### The Halo Effect bias

**The halo effect** is a cognitive bias that claims that positive impressions of people, brands, and products in one area influence our feelings in another area. The overall impression of a person influences perception about the person’s character. This especially applies to physical attractiveness influencing how you rate their other qualities.

The judgment reflects one’s individual preferences, prejudices, ideology, and social perception.

### Anchoring and Adjustment Bias

**Anchoring and adjustment** is a cognitive bias/ heuristic that arises out of people's tendency to estimate by starting from an initial guess and then making adjustments to the initial guess in order to arrive at the final estimate. The initial guess “anchor” may come from a variety of sources, such as the computation, a given value, the current value or the historical averages.

From an investment perspective, one obvious anchor is the recent share price. Many people base their investment decisions on the current share price relative to its trading history. In fact, there is an investment school of thought called technical analysis that bases investing on charting share prices. Unfortunately, where a share price has been in the past presents no information as to whether or not a stock is cheap or expensive.

Degeorge, Patel, and Zeckhauser (1999) find that the executives aim to exceed salient earning per share (EPS) thresholds, thus, a specific level of EPS serves as an anchor for the executives which, in turn influences their decision. Moreover, the investors are not ready to bid the stock prices high enough when the stocks are at or near their peak historical prices because they are anchored to the historical highest (George & Hwang, 2004).

Similarly, Cen, Hilary, Wei, and Zhang (2010) and Cen, Hilary, and Wei (2013) observe that while estimating the future success of firm, the investors are anchored to historical averages. They also find that for the firms with high industry median-adjusted forecasted earnings per share, stock returns happen to be higher than for firms with low industry median adjusted forecasted earnings per share. This phenomenon is referred to as the cross-sectional anchoring of forecasted earnings per share effect.

Kaustia, Alho, and Puttonen (2008) find significant anchoring effects in long-term future stock return estimates in Scandinavian stock market. Williams (2010) finds that stock prices depend on four things one being anchoring level. Campbell and Sharpe (2009) identify anchoring effect of historical values in predictions of macroeconomic data such as the consumer price index or non-farm payroll employment by professionals, resulting in significant forecast errors.

Corporate acquisitions are also found to be affected by the anchoring bias (Baker, Pan, & Wurgler, 2009). Anchoring and adjustment affects the extremity of earning forecasts (Amir & Ganzach, 1998).

Examples of Anchoring Bias:

1. An investor will have an attraction towards a stock which has fallen considerably from their previous or all-time high – say even from a 52 week high. The investor is anchoring on the high prices that the stock had reached and now believes this provides an investment opportunity.
2. Few times investors also would anchor to a price only below which they will buy. By this, they may miss the opportunity to invest. For instance, someone may want to buy stock X at Rs 50 or below but the price moved to Rs 55 and hence wanted to wait to come down to their anchored price (Rs 50). But, the stock further moved up to 60 and then 70. The investor would never buy that stock and in next few years it would have reached 100 or even more. Here, clearly the investor has missed the opportunity. He should have only checked the fundamentals and margin of safety and if the price was right even at 70, could have bought it.

### Mere Exposure Effect/ Familiarity Bias

Financial theory suggests we should analyse the expected return and risk of each investment. However, usually investors tend to trade in the securities with which they are familiar. There is comfort in having your money invested in a business that is visible to you. This familiarity bias has a strong influence on what you buy.



Choosing investments is an exercise in decision-making under risk and uncertainty. Chip Heath and Amos Tversky show in a series of experiments that when people are faced with a choice between two gambles, they will pick the one that is more familiar to them. In fact, they will sometimes pick the more familiar gamble even if the odds of winning are lower! Gur Huberman argues that "Familiarity is associated with a general sense of comfort with the known and discomfort with-even distaste for and fear of-the alien and distant." For example, when given a list of countries and asked to rank order the performance of the economy or stock market in those countries, people rank their home country's performance better.

Despite obvious gains from diversification, investors prefer “familiar” investments of their own country, region, state, or company. In a study, Columbia Business School professor Gur Huberman found that in 49 out of 50 states, investors are more likely to hold shares of their local Regional Bell Operating Company (RBOC)—regional telephone companies—than of any other RBOC. Investors also prefer domestic investments over international investments. In a study conducted by professors Norman Strong and Xinshong Xu, the professors investigated this “equity home bias.” They argue that, by itself, investors’ relative optimism about the home market cannot fully account for equity home bias.

### Bandwagon Effect

**The Bandwagon effect** refers to our habit of adopting certain behaviours or beliefs because many other people do the same. This cognitive bias is defined as people’s tendencies to quickly conform to popular trends or beliefs within their society (Simon, 1954). The bandwagon effect or groupthink, describes gaining comfort in something because many other people do (or believe) the same.

Warren Buffett tells a story about the oil prospector who dies and is in a large crowd of other oil prospectors who are all waiting at the gates of heaven. All of a sudden, the crowd disperses. Saint Peter asks the oil prospector why the crowd dispersed. The oil prospector said it was simple: “I shouted, ‘Oil discovered in hell.’” Saint Peter asks the oil prospector why he would like to be let into heaven. After thinking for a while the oil prospector says, “I think I will go and join my colleagues as there may be some truth in that rumour after all.”

### Loss Aversion Bias

**Loss aversion** describes how we fear loss considerably more than we value gaining something of the same worth. For example, we’re more frustrated by losing an amount of money lying in pant pocket washed away in the washing machine than we would be happy to find the same amount of money in an old unused pant pocket.

Established efficient market theory holds that there is a direct relationship and trade-off between risk and return. The higher the risk associated with an investment, the greater the return. The theory assumes that investors seek the highest return for the level of risk they are willing and able to take on. Behavioural finance and related research seem to indicate otherwise.

In their seminal study “Prospect Theory: An Analysis of Decision under Risk,” behavioural finance pioneers Dan Kahneman and Amos Taversky found that investors are more sensitive to loss than to risk and possible return. In short, people prefer to avoid loss over acquiring an equivalent gain: It’s better not to lose $10 than to find $10.

Money lost is always considered hard earned money and pain is more. On the other hand, gains are considered as ‘easy money’. This tendency to steer clear of the possibility of losing money is caused by loss aversion bias. Loss aversion causes people to make less than optimal choices. We might wait too long to sell a poorly performing investment as it gives us great displeasure to make a loss. As a consequence of this bias, people do not want to take any risk on their investments, like not considering equity investments at all and confining themselves to FDs.

The loss-aversion tendency breaks one of the cardinal rules of economics; the measurement of opportunity cost. To be a successful investor over time you must be able to properly measure opportunity cost and not be anchored to past investment decisions due to the inbuilt human tendency to avoid losses. Investors who become anchored due to loss aversion will pass on mouth-watering investment opportunities to retain an existing loss-making investment in the hope of recouping their losses.

### Endowment Effect Bias

This bias occurs when we overvalue something that we own, regardless of its objective market value (Kahneman et al., 1991). It is evident when people become relatively reluctant to part with a good they own for its cash equivalent, or if the amount that people are willing to pay for the good is lower than what they are willing to accept when selling it.

Put more simply, people place a greater value on things once they have established ownership. This is especially true for things that wouldn’t normally be bought or sold on the market, usually items with symbolic, experiential, or emotional significance. Endowment effect research has been conducted with goods ranging from coffee mugs (Kahneman et al., 1990) to sports cards (List, 2011). While researchers have proposed different reasons for the effect, it may be best explained by psychological factors related to loss aversion (Ericson & Fuster, 2014).

For example, once an investor buys a particular equity share, he/ she will be rating these shares at a higher value and unwilling to sell at a loss. They think their shares are highly valuable and their prices will continue to go up.

### Sunk Cost Bias

Individuals commit the sunk cost fallacy when they continue behaviour or endeavour as a result of previously invested resources (time, money or effort) (Arkes & Blumer, 1985). This fallacy, which is related to loss aversion and status quo bias, can also be viewed as bias resulting from an ongoing commitment. For example, individuals sometimes order too much food and then over-eat just to “get their money’s worth”. Similarly, a person may have a $20 ticket to a concert and then drive for hours through a blizzard, just because she feels that she has to attend due to having made the initial investment. If the costs outweigh the benefits, the extra costs incurred (inconvenience, time or even money) are held in a different mental account than the one associated with the ticket transaction (Thaler, 1999).

Examples:

1. An insurance term assurance plan is usually the best insurance for life cover, but, many of us have bought endowment and money back policies, which pay meagre 5% returns, but charge huge premiums. We also continue to pay premiums for these, just because we have paid few premiums already instead of surrendering the policy after 3 years or convert them to ‘paid up’ policies.
2. In a card game, we could have seen a lot of people playing again and again to win somehow to recover the cost or amount that they have already spent and sunk. They think that if they don’t win, the money spent already in the game will have been wasted.
3. A company might have started a project and decided to invest a billion rupees in building a factory unit. Halfway through they realise the market for their product is in a decline phase and hence in a dilemma of whether to continue with the factory or not. Maybe, they could consider the money spent as a sunk cost and walk away from the project, instead of spending additional money to produce a product that market is no more excited about.
4. Investment in ‘white elephants’ or ‘Concorde Fallacy’ - Concorde was a supersonic passenger jet, which was a joint project between the French and British governments. After a period of significant investment, it became apparent that the project was likely to be a bad financial investment. Costs were high, and revenue limited. However, because a lot had been invested in the project already, it was decided to continue with the project causing further financial losses – rather than writing off the sunk costs and accepting initial financial losses. (There were also political reasons for continuing with investment, such as Britain’s entry to the Single Market).

If governments and large companies like those involved in the Concorde project are susceptible to cognitive fallacies like the sunk cost fallacy, it is easy to see that significant amounts of money, time and effort are wasted because the sunk costs would never be recovered regardless of whether the project was abandoned. Since governments are sometimes using tax-payers’ money for projects, their adherence to the sunk cost fallacy can negatively affect us all. The sunk cost fallacy occurs because we are not purely rational decision-makers and are often influenced by our emotions. When we have previously made an investment into a choice, we are likely to feel guilty or regretful if we do not follow-through on that decision. The sunk cost fallacy is associated with the commitment bias, where we continue to support our past decisions despite new evidence suggesting that it isn’t the best course of action.

We fail to take into account that whatever time, effort or money that we have already expended will not be recovered. We end up making decisions based on past costs and instead of present and future costs and benefits, which are the only ones that rationally should make a difference.

The best way to avoid the sunk cost trap is to set investment goals. To do this, investors could set a performance target on their portfolio. For example, an investor might seek a 10% return from his or her portfolio over the next two years, or for the portfolio to beat the Standard and Poor's 500 index (S&P 500) by 5%. If the portfolio fails to achieve these goals, it could be re-evaluated to see where improvements could be made to achieve better returns.

If investors are trading individual stocks, they could have a predetermined exit point before entering a trade. This helps to automatically cut losing positions and avoid the tendency to commit more time and capital to investments that aren't working.

# Other Cognitive Biases

# (not part of the survey done by author)

Other than the big eight cognitive biases most relevant for marketing professionals, certain other biases are briefly touched upon (though not part of the survey done by the author) bur relevant for most investors and businesses. An acronym “BRAIN IS FOOL’S SCHOOL” is used for ease of remembrance:

### Backwards Bias

We always live in memories. This backwardness is similar to bias because investors with such bias are often focused on returns, plans and losses on previous investments. This situation is similar to the way a child accuses his/ her cat of eating homework. In this way, the investor sees all previous gains and profits as a planned investment and blames the losses and mismanagement in them on unforeseen events.

This type of mental state can tarnish your present judgment and mis-assess previous decisions. Everybody makes mistakes and when the investment returns are not according to your estimates, it is a shock. But this does not mean that unforeseen circumstances are to blame. You should calculate both profit and loss on a realistic basis with clear thinking and reason.

### Representativeness

Representativeness refers to people's tendency to consider a characteristic to be the representative of the whole of the phenomenon regardless of whether the said characteristic relates to the phenomenon or not. Two primary interpretations of representativeness heuristic/ bias apply especially to individual investors: first, base rate neglect and second, sample size neglect. Base rate neglect refers to investors' tendency to contextualize the venture in a way that is easy to understand, when they are judging the soundness of a company for investment purposes. However, while making the judgment they are likely to ignore other related factors which may affect the value of the investment. The reason for relying on such stereotypes is that investors consider it as an alternative to the required research to evaluate the investment.

### Affinity or Similarity bias

**Affinity bias** is the tendency to favour people who share similar interests, backgrounds, and experiences with us. Because of affinity bias, we tend to feel more comfortable around people who are like us. We also tend to unconsciously reject those who act or look different to us.

One of the places where affinity bias is most insidious and harmful is in hiring. After all, recruiters, hiring managers, and HR leaders are not immune to unconscious bias.

So while hiring teams may think they’re objectively choosing the best candidates, they may be picking people who look and think like them and come from similar backgrounds without even realizing it. This risks creating a homogenous workplace at best and a non-inclusive, discriminatory workplace at worst.

A common example is buying an Apple iPhone as that gives off the perception of being technologically on the cutting edge and a bit more upmarket. This, despite the fact that some iPhone’s may be rated lower than other phones and in fact cost more for this lower rated performance. The power of “brand” is implanting this perception of technological luxury to lead to a real outcome, i.e. a consumer making a potentially irrational choice to buy an iPhone over an alternative. That’s not to say that an iPhone is a bad phone or that the value of “feeling” good about the purchase and fitting in to a social norm doesn’t have worth. But it is to say that if one could be blind to brand the rational calculus would be to go with a cheaper, better-performing alternative.

In the investment world, this same perception-as-reality affinity bias can lead to the purchase of “brand name” investment options that may, in fact, charge higher fees for no better performance than a cheaper alternative that lacks the brand name. Affinity investment bias may also arise when one believes their choice to investment reflects a certain value they hold within themselves.

A classic example of investment affinity bias is rooted in patriotism. Many individuals will make uneconomical consumer choices by purchasing domestic holdings and receive the “benefit” of patriotism. At the same time, they may lose the utility of high returns and lower risk from a more diversified and global portfolio.

Affinity bias doesn’t just rise from the perception of a brand, or how one believes that choice reflects their values. It can also come from a type of positive peer pressure—e.g. all my friends are invested in stock Z, so too should I be for fear of missing out and being outside the group. I want to be positively perceived by others and/or follow a “herd mentality” to “fit in.” However, I may have made this choice despite a lack of rational diligence, which had I performed, may have led me to uncover certain “harm” to this investment choice relative to my goals.

The first step in overcoming any type of emotional bias is recognizing that that bias exists.

The second step is working to take emotion and human irrationality out of the investment process. Part of this can be done through the agency of an independent investment advisor. By disintermediating yourself from the process you can allow an advisor to reflect on the facts to make decisions on your behalf. However, the investment process is still being viewed through a human lens and bias may still influence, though to a lesser degree.

So this requires a third step. When working with an investment advisor, be sure to engage one that is facts-focused and applies a rational matrix to all investment decisions. As an example, your advisor should have a set of quantitatively-linked investment criteria from which they do not deviate to make a decision to buy, sell or hold an investment vehicle (they should also have a methodology that applies to what extent that holding plays a small or outsized role in your overall portfolio allocation).

As an example, if the holding is an equity vehicle like a mutual fund, your advisor may want to look at the size of the fund, the tenure of the manager, and historical performance. They may also want to look at to what extent that fund’s style (e.g. large-cap growth) and investment thesis/sector orientation (e.g. emerging markets) play in the overall risk and allocation of your portfolio within the context of your goals.

There are dozens of other variables that should be considered, but the bottom line is that when all of these quantitative factors are compiled and analysed in the context of an investor’s mandate there should be a mathematical decision arrived at that is in the client’s best interest. It is only in this way that an investor can mitigate or eliminate most of the inherent biases that come with the natural state of being human.

Taking a step further some investor may choose to fully index (i.e. invest passively) or rely on pure quantitative triggers and algorithms (as in high-frequency trading) to completely remove any human agency or error. However, there can be a benefit to inherent human irrationality at times. This may come in the form of acting on information that a computer would ignore as it’s a contrary indicator to herd mentality (e.g. John Paulson shorting the housing and financial services industry with his hedge fund during the Financial Crisis of 2007-2008). However, these are outlier cases, and the general thread of logic should be to combine the base of humanity with the rational calculus of process and mathematics.

### Information Bias

We are living in a time where we get a stock of daily information without any confirmation. As an investor, most information can cause hundreds of doubts about investment plans and easily confuse them when choosing an investment. This overload of information can become prejudicial to the investor. The best way to avoid this is to ignore this unnecessary information and avoid it because this information can sometimes be inaccurate.



It is necessary to investigate fraud and unproven instances related to investment. But at the same time it is also necessary to remove such information which is clearly of no use and will only hamper the investment plan. It is reasonable to think that investors should avoid looking at daily share-price moves and focus on big things, which can be a medium-term investment.

Also related is Information processing bias which means the inability to understand the information in its correct sense and conceiving it irrationally and abruptly. Information processing bias occurs due to multiple reasons, which can be traced to the common point of cognitive bias- a systematic error in understanding judgments, facts and decisions.

Information Processing bias is a cognitive error, much as belief perseverance bias. Belief perseverance bias stands for when an individual doesn’t comprehend any new information because of previous news conditioning. The individual refuses to process a new piece of information because it is hard for them to grasp, breakdown and understand the new situation. They continue to be rigid on the older piece of information. Even when they try, they only process the information relevant to them, match with the thoughts and agree to their understanding.

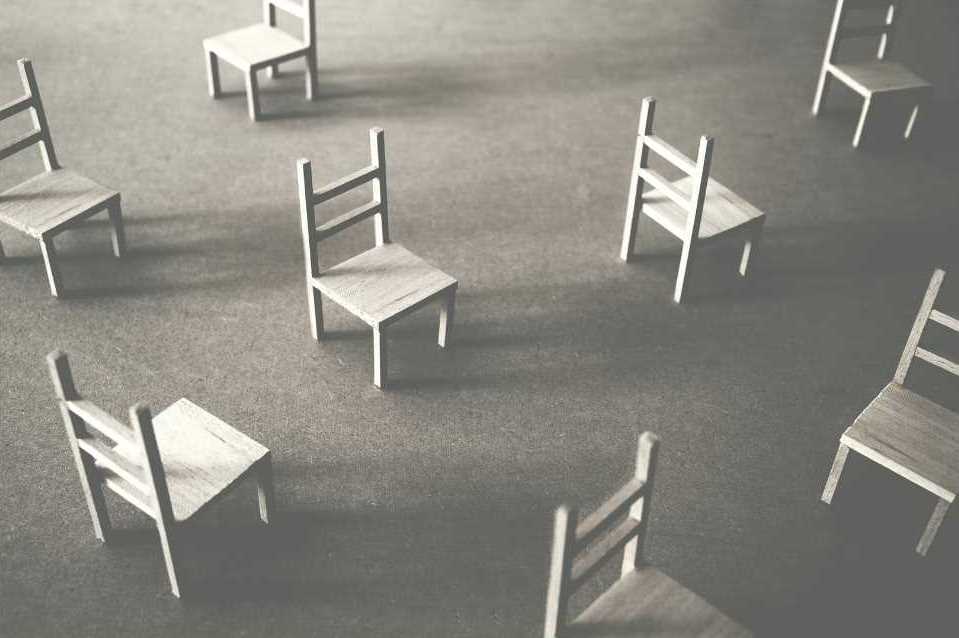
Information processing bias also agrees with confirmation bias. People naturally pay attention to the information that agrees with their previous beliefs and discards any information they do not want to acknowledge. It is much like paying selective attention to things they like and things they don’t like.

But more than differentiating between the bias as Information processing bias or Confirmation bias, it is much more critical to determine these two between cognitive bias and emotional biases.

A cognitive bias refers to a systematic error when an individual tries to process new information, interpreting and implying this information into the future’s decision-making processes.

When it comes to making sound decisions, there are two ways to go about them. The first one is to gather all the related information, deeply analyse the facts, calculate the consequences of the optional decisions in hand, and make a final call about what to do. The other is to take a tried and tested shortcut, make a broad guess and just go ahead with it.

### Non-Disposition Effect

As a result of their fear of loss, investors often hesitate to realise their losses and hold stocks for too long hoping for a recovery. This “disposition effect,” coined in a 1985 study by economists Hersh Shefrin and Meir Statman, is the tendency of investors to sell winning positions and hold onto losing positions. The effect can increase investors’ capital gains taxes to be paid, the regulations of which incentivise investors to defer gains as long as possible.

Berkeley business school professor Terrance Odean studied this effect, finding that in the months after the sale of “winning” investments, these investments continued to outperform the losing one’s still in the portfolio. Both individual and professional investors do this across assets, including common stock options, real estate, and futures. This effect directly contradicts the famous investing rule, “Cut your losses short and let your winners run.”

Oxitec, a company that provided Brazil with mosquito technology, has created a solution which is both more effective and more eco-friendly than other traditional methods, such as insecticides. Unfortunately, more risk-averse nations, such as European countries, continue to lag in comparison to nations like America and China. Even though European countries would greatly benefit from similar technologies to address challenges with crop pests, insecticides are still commonly used. Within the agriculture sector, Europe typically has a more conservative approach, with outdated regulations. This conservative nature has led to their lag in the sector, and their hesitation to adopt new technologies. Non-Disposition Effect bias within their decision making bodies has potentially prevented European nations from trying new and emerging technologies, due to the fear of risk and loss.

### Illusion of control

Any stock market around the world is huge in size. It is made up of many participants who regularly buy and sell assets. Since there are so many buyers and sellers, and the money is spread out amongst them, none of them has complete control over the events that take place in the market. The fact of the matter is that investment markets are based on probabilities. Anyone who claims that they can predict the outcome of stock markets with complete accuracy is most certainly suffering from a mental bias. This bias is called an illusion of control bias.



Illusion of control bias is the tendency of investors to believe that they have a certain degree of control over the outcomes of investment markets! Not all investors believe that they have complete control. However, a lot of them do believe that they have some influence over the market. In most cases, this is not true because investment markets are huge markets where trillions of dollars change hands every week. Hence, if an individual investor or even a small to mid-size institution believes that they are in control of the market, they may be wrong.

It is true that some of the investor’s predictions might come true in the short run. However, it may be a mere co-incidence and may not prove anything in the long run. A lot of times, investors feel in control of their portfolios because they use techniques such as limit orders, etc., to buy and sell shares. However, in many cases, it just leads to unnecessary buying and selling as prices fluctuate within a given range. The illusion of control bias is also closely linked to the feeling of overconfidence, which has been discussed in another article.

A false illusion of control can cause some serious harm to the investors’ portfolio. Some examples have been provided below:

* Illusion of control causes investors to take positions in penny stocks. This is because they believe that since the company is small, they can use their capital to gain a significant stake in the company and then control the outcome. However, a lot of these penny stocks are inherently risky because of the nature of the business that they are in. This illusion of control only causes investors to lose more money!
* Investors with an illusion of control often tend to believe that they are experts in certain sectors. Hence, they concentrate most of their portfolio in one single sector or industry. This is where the problem starts since the portfolio is undiversified. An undiversified portfolio is likely to see severe fluctuations in value if an adverse event takes place.
* Illusion of control causes investors to not pay attention to an opportunity when it arises. They may miss good entry and exit points in a particular stock because they had a false illusion of control.

Investors need to understand that all investing involves the use of probability, and hence there are several outcomes possible, controlling all of which are impossible. In order to really drill this point, investors must try and make a list of the number of factors that could influence the price of a stock. They would find that there are factors at the government level, the competitor level, the macro-economy level, the market level, and so on. Since there are so many diverse factors involved in this complex system, controlling it is almost impossible.

Investors must avoid investing in stocks or other financial instruments, which give them a false illusion of control. This is particularly the case when investors start investing in penny stocks or other asset classes where there are wild fluctuations in the valuation.

Investors must actively try to look at the risks involved in their investments. They should realize that since they do not control the outcome of the investment, there are many possible outcomes. Do they have the wherewithal to survive each of these outcomes is the question that needs to be asked by the investor? It would be prudent for the investor to be absolutely clear upon their investment time frame as well as the possibility that some things can go wrong during that time frame.

The fact of the matter is that if any broker or any investor tells you that they are in complete control of their investments, they are most likely not telling the truth. It is impossible for retail investors and even smaller institutions to make any dent in the functioning of the stock markets.

### Status Quo Bias

**Status quo bias** is evident when people prefer things to stay the same by doing nothing (see also inertia) or by sticking with a decision made previously (Samuelson, & Zeckhauser, 1988). This may happen even when only small transition costs are involved and the importance of the decision is great. Samuelson and Zeckhauser note that status quo bias is consistent with loss aversion, and that it could be psychologically explained by previously made commitments, sunk cost thinking, cognitive dissonance, a need to feel in control, and regret avoidance. The latter is based on Kahneman and Tversky’s observation that people feel greater regret for bad outcomes that result from new actions taken than for bad consequences that are the consequence of inaction (Kahneman & Tversky, 1982).

Investors are usually guilty of status quo bias. People know that they should start saving and investing, but don’t because of inertia. While we know that the earlier we start, the better our returns will be over the long term, we keep putting it off for later. If effort is required to change the status quo, we tend to avoid it and the bias is magnified if there is a lot of paperwork involved. This kind of procrastination compromises the compounding effect of investments. Lesser time of investment means lesser returns. For example, people may keep their deposits in their regular bank, even if they find better alternatives in other banks who offer more interest.

### Gamblers Fallacy

Related to representativeness heuristic, the gambler’s fallacy lies in seeing patterns where none exist. Investors often want to impose a sense of order on things that are actually random. The phenomenon is named after gamblers who believe that a string of good luck will follow a string of bad luck in a casino.

Examples:

1. In is the old saying in stock markets that ‘whatever goes up must come down’, and vice versa. This may be true eventually, but for how long and when will the trend reverse?
2. Investors see a pattern and begin to trade based on how they think that pattern will play out.
3. Investor has seen this stock falling for ‘n’ continuous trading day, and it cannot go beyond this so let us buy.

### Regret Bias

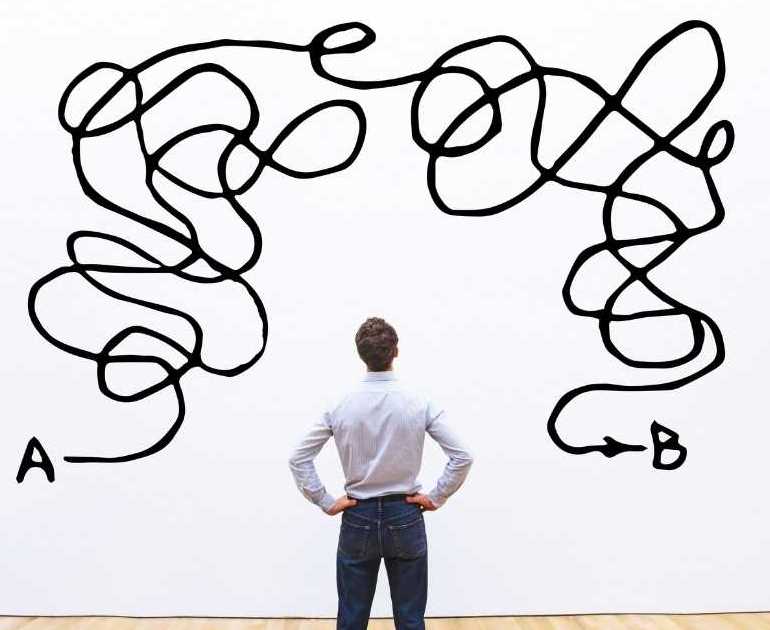
People exhibiting regret aversion avoid taking decisive actions because they fear that, in hindsight, whatever course they select will prove less than optimal. Basically, this bias seeks to avoid the emotional pain of regret associated with poor decision making.

Investors feel pressure to time their purchases of stocks perfectly in order to maximize their returns. When they suffer a loss, they regret not acting earlier. With regret comes the thought that they saw it coming all along. In fact, it was one of the many possibilities that they might have anticipated. Whichever one of them pans out, the investor becomes convinced that he or she saw it coming

It is important to reduce regrets since as human beings we try to avoid the feeling of remorse as much as possible and often go too long and headlong, to avoid this feeling. By not selling the stock and incurring losses, a trader never has to face regret.

Investors can reduce the regret factor that plays a role in their decisions if they carefully analyse past options. They need to understand the psychology behind regret and also to see if he/ she have been affected by it in the past.

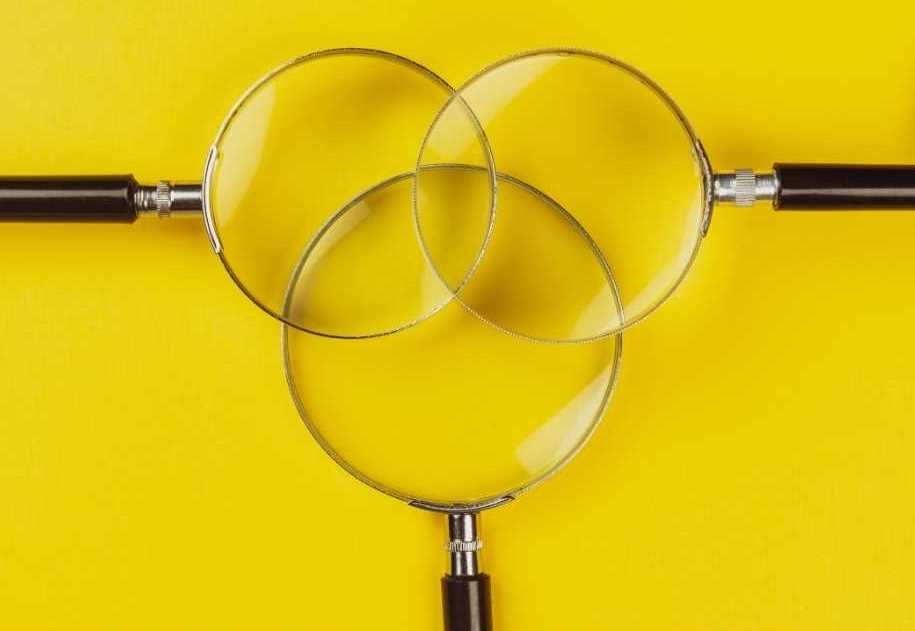
### Availability Cascade

**Availability Cascade** describes a self-reinforcing cycle that explains the development of certain kinds of collective beliefs. It may be a novel idea or insight which seems to explain a complex process in a straightforward way. It is used to evaluate the frequency or likelihood of an event on the basis of how quickly instances or associations come to mind. When things related to each other are easily brought to mind, this fact leads to an overestimation of the frequency or likelihood of this event.

According to Tversky and Kahneman (1974), people rely on the ease with which past experiences or information can be brought to mind to assess the probability of an event. Barber and Odean (2002) show that the investors tend to invest in the attention grabbing stocks because, choosing a suitable stock or group of stocks among thousands of stocks in the market needs considerable effort and time.

### Near/ Present/ Novelty Bias

**The near or present bias** refers to the tendency of people to give stronger weight to payoffs that are near or closer to the present time when considering trade-offs between two future moments (O’Donoghue & Rabin, 1999). For example, a present-biased person might prefer to receive ten dollars today over receiving fifteen dollars tomorrow, but wouldn’t mind waiting an extra day if the choice were for the same amounts one year from today versus one year and one day from today (see time discounting).



The concept of present bias is often used more generally to describe impatience or immediate gratification in decision-making. Short-sightedness does a lot of damage when it comes to financial goals, but many are guilty of focusing much more on short-term gains than long-term ones. Present bias refers to the tendency to favour immediate rewards. In other words, one tends to give stronger weight to payoffs that are closer to the present when considering trade-offs between two future moments. So, if you have a choice between an equity instrument which promises a pay out of over ₹50,000 after 15 years with an investment of ₹10,000, and an FD which promises a pay out of just over ₹20,000 after 10 years, you might be inclined to pick the latter.

On the similar lines as present bias, Novelty bias, as the name itself suggests, means to pay the most attention to recent news and not to consider old stale news. We can see the importance of novelty bias in our daily lives. At the time of appraisal in corporate organizations, many employees start working in extra time, two months before the assessment to meet their goals. This affects their manager's decisions when they see the extra effort being made by that employee. This allows managers to focus more on the performance of the employee's current days, rather than looking at the performance of the entire year. These are the power of novelty bias.

The novelty bias diverts attention from the long-term plan to short-term results and its effects. This way the investor starts to look at the recent growth of investment opportunities and decides whether to invest in it or not. Annual reports help with investment planning, but now times are changing, and even short-term results have the potential to affect investors.

When it comes to investing, investors look at the company's current profit figures.

Examples:

1. If an investor has invested ₹ 50,000 in a mutual fund and has worked on it for at least ten years, then it is certain that the mutual fund has given him a growth advantage. In ten years, the market value of his investment increased to ₹ 1,50,000. Then in the last two months, the price fell to ₹ 1,20,000. The investor is seeing his investment performance as a loss of ₹ 30,000 in two months, but he is not seeing a total profit of ₹ 70,000 in the last 10 years. This is called recency bias. Due to market disturbances, investors are likely to stay away from equity.
2. Investors often turn away from equity when the market falls sharply; instead they should invest because they can buy more at lower prices. Novelty bias can alter judgment and harm our financial interests in the long term.

### Dunning Kruger Effect

**Dunning Kruger Effect** is a cognitive bias whereby people with limited knowledge or competence in a given intellectual or social domain greatly overestimate their own knowledge or competence in that domain relative to objective criteria or to the performance of their peers or of people in general. According to the researchers for whom it is named, psychologists David Dunning and Justin Kruger, the effect is explained by the fact that the metacognitive ability to recognize deficiencies in one’s own knowledge or competence requires that one possess at least a minimum level of the same kind of knowledge or competence, which those who exhibit the effect have not attained. Because they are unaware of their deficiencies, such people generally assume that they are not deficient, in keeping with the tendency of most people to “choose what they think is the most reasonable and optimal option.” This is when people who believe that they are smarter and more capable than they really are.

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### Framing Effect

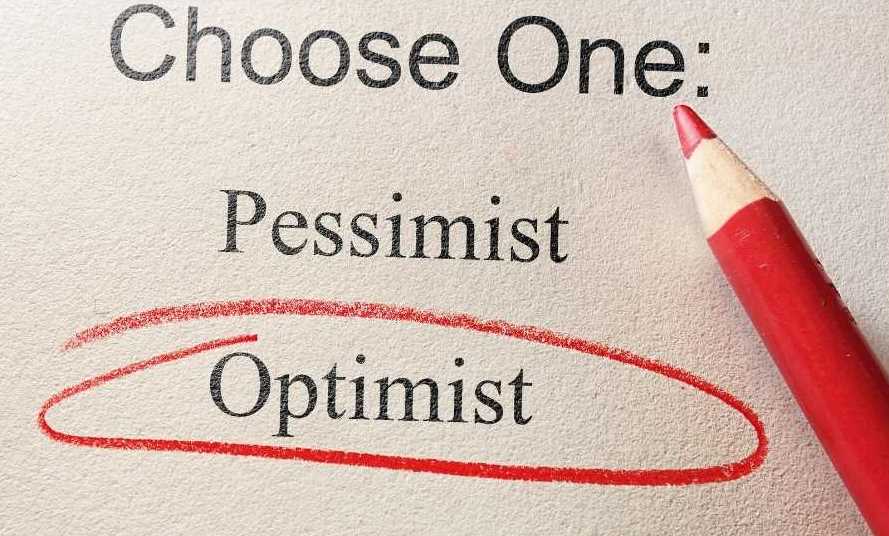
According to the modern portfolio theory, as developed by Nobel Prize winning economist Harry Markowits, an investment should not be evaluated alone, but rather by how it affects the portfolio as a whole. Rather than focusing on individual securities, investors should consider wealth more broadly. In practice, however, investors tend to become hyper-focused on specific investments or investment classes. These “narrow” frames tend to increase investor sensitivity to loss. However, by evaluating investments and performance with a “wide” frame, investors exhibit a greater tendency to accept short-term losses and their effects.

For example, several instances of mis-selling of financial products like insurance policies, ULIPs, teaser loans, 0% interest on retail products purchase loans etc. We go into further details later in this book on this preposition.

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### Optimism Bias

People tend to overestimate the probability of positive events and underestimate the probability of negative events happening to them in the future (Sharot, 2011). A number of factors can explain unrealistic optimism, including perceived control and being in a good mood (Helweg-Larsen & Shepperd, 2001).

Inferences about what will occur in the future are critical to decision making, enabling us to prepare our actions so as to avoid harm and gain reward. Given the importance of these future projections, one might expect the brain to possess accurate, unbiased foresight. This bias leads you to believe that you are less likely to suffer from misfortune and more likely to attain success than your peers. It’s easy to believe that bad things happen only to other people. Even though we know that we’re not immune to losses, it’s much more comforting to believe otherwise, and this tendency is known as optimism bias. In sharp contrast, people tend to overestimate the probability of “good" events. We may overestimate our chances of winning a lottery as we only hear about the successes of lottery winners and not about all the other people who didn’t win. This also falls into the category of heuristic behaviour, wherein your mind takes the shortcut to convince you that your chances of winning a lottery are high. By underestimating the chances of making a loss and overestimating the possibility of a windfall or great returns, you might end up being underprepared for difficult financial situations.

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### Over Confidence

**Overconfidence** is an emotional bias. Overconfident investors believe they have more control over their investments than they truly do. Since investing involves complex forecasts of the future, overconfident investors may overestimate their abilities to identify successful investments. In fact, experts often overestimate their own abilities more than the average person does.

Economist Steven Pressman identifies overconfidence as the primary culprit responsible for the susceptibility of investors to financial fraud. People are poorly calibrated in estimating probabilities and usually overestimate the precision of their knowledge and ability to do well and about good things happening in future than bad. This theory summarises how people form beliefs under uncertainty. Overconfident investors trade too much (Biais et al., 2000; Odean, 1998, 1999) and overreact to private signals and underreact to public signals (Daniel et al., 1998; Yue et al., 2000). Bloomfield et al. (1998) showed experimentally that alerting less-informed investors – who suffer from the above mentioned traits of overconfidence – to the extent of their informational disadvantage can eliminate overconfidence and thereby welfare losses. Likewise, Zacharakis and Shepherd (1999) recommend to try to reduce overconfidence by improving knowledge and thereby the decision quality of venture capitalists.

In investing, Overconfident investors and traders tend to believe they are better than everyone else in choosing best stocks and funds etc., and even better in timing to enter and exit a position. People take excessive degree of confidence in one’s ability in making decisions. That is under belief that we are better and wiser than others in choosing investments than we actually are. This often leads to swifter decisions that the investor later regret. This bias usually happens when an investor tastes a few easy successful investments. They don’t realise that they were just lucky those few times. Instead, they start believing themselves and think they have the capacity better than others in selecting winning investments

### Lack of Probability

**Lack of probability** or neglecting probability bias occurs when investors or businesses neglect relevant statistical probabilities or fail to consider them appropriately when making decisions.

It can lead to decisions based on perceived likelihood rather than actual probabilities, impacting the accuracy of risk assessments and decision-making processes

### Survivorship Bias

We love watching movies like Gladiator, where a muscular Russell Crowe stands tall after defeating wave after wave of enemies. Sometimes, however, we concentrate on the fact of surviving and fixate on that, and overlook everything else. This is a well-known cognitive bias that psychologists refer to as “**survivorship bias**.”

In investment, survivorship bias is the tendency to view the performance of existing stocks or funds in the market as a representative comprehensive sample without regarding those that have gone bust. Survivorship bias can result in the overestimation of historical performance and general attributes of a fund or market index. Put simply, survivorship bias describes our tendency to focus on the people or things that have passed some kind of selection process—whether it’s literal survival in the gladiator pits, or getting a perfect score on a standardized test—and forgetting about other important factors.

Here is an example of comprehensive understanding:

During World War II, the military looked at the planes which had returned from their missions. They saw that there were certain locations where the planes had received damage from enemy fire. These locations are shown in the image as red dots. On first thought, it was suggested that these locations should be reinforced with heavy armour so that the planes receive minimal damage. However, it was pointed out that this study was done only on those planes which survived the hits. What about the planes which did not return back? It seemed that the red spots were the locations where the planes could take a hit and still come back. Hence, it was recommended that the places which were not marked by red spots, for example, the engine, should be reinforced.

Survivorship bias is a natural singularity that makes the existing funds in the investment market more visible and therefore more highly viewed as a representative sample. Survivorship bias occurs because many funds in the investment market are closed by the investment manager for various reasons leaving existing funds at the forefront of the investing universe.

Funds may close for various reasons. Numerous market researchers follow and have reported on the effects of fund closings, highlighting the occurrence of survivorship bias. Market researchers regularly follow fund survivorship bias and fund closings to gauge historical trends and add new dynamics to fund performance monitoring.

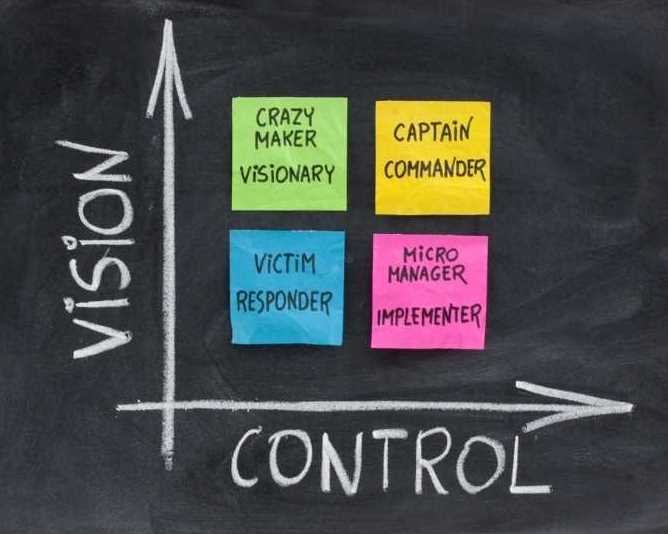
The impact of survivorship bias comes in the way of creating such a view of the stock or the market index which may look excessively optimistic or excessively pessimistic. Either of the scenarios can impact the trading decision of the investor since an opposite actual situation leads to losses consequently.

In the case of trading, the market may become volatile and some stocks may perform poorly.

Investing in mutual funds is one of the examples of investing in the financial market in which there can be survivorship bias. During an occasion of recession, investing in mutual funds may have helped your funds survive the crisis in the market. The factors helping the funds to survive could have been their composite breakdown or even the fund manager’s ability to react to the market effectively. On the other hand, some other mutual funds may have performed poorly and may have been forced to shut down. Conclusively, the net effect would only be a positively-skewed result which would fail to portray the actual result.

Hence, to get the actual result, it is important to take into account all the mutual funds in the market. In case you wish to study only the top mutual funds then you must consider the performance of all top mutual funds during the recession and then take the decision.

### Self-control bias

Investors who have been in the market for a long time know that investing is an emotional activity as much as it is a financial activity. This is the reason that people who have a higher degree of self-control generally tend to do better than their peers. **Self-control bias** may seem like an obvious and simple flaw. However, it has a profound effect on the behaviour of any investor.

Self-control bias stems from a behavioural flaw called hyperbolic discounting. As per hyperbolic discounting, there is an inherent flaw in the way investors perceive gains. They have a large appetite for short term gains. However, if they are asked to sacrifice short term gains for long term gains which will be much bigger, most will still choose the short term gains. Hence, investors have a skewed time preference, which negatively impacts their decision making. In simple words, investors with this bias are inclined towards spending more today at the expense of saving less for the future.

Self-control bias is not only seen in the financial world. It is also seen in the other walks of our daily life. For instance, people may be unable to lose weight despite knowing that it is in their best long term interest to do so. They may continuously choose to eat unhealthy food despite knowing that it will cause harm to them.

The first thing to note about self-control bias is that people with this bias have a smaller portfolio size. This is because they may prioritize frivolous monthly expenses over long term retirement savings. Hence, they either start investing late or invest a smaller portion of their income.

Their portfolio size and savings rate may be small, but they tend to have lofty goals. This is the reason that people with self-control bias often tend to undertake risky investments. This is done so that they can meet their goals with smaller investments. However, here too, their self-control bias comes into play. They tend to overvalue the immediate gains arising from the risky investments and undervalue the long term impact that the additional risk can have on their portfolio.

People with self-control bias tend to prefer investments that have shorter lock-in periods. Often, this means that they ignore some better investment proposals only because it means that their money will be locked in for a longer period of time. People with self-control bias feel that they should be able to spend the money in the near future. They do not have a long term outlook.

Another important point about people with self-control bias is that they tend to prefer investments that give a monthly income. The problem with this approach is that as soon as they are paid their monthly dividend, they are likely to spend it all. The true value of any investment can only be realized if it is allowed to compound for an extended period of time. However, if the investor with the self-control bias keeps on obtaining their dividends, they are likely to spend it. Hence, they may never be able to gain from the compounding power of their investments.

In many parts of the world, self-control bias is used to justify making consumption purchases such as real estate in the name of investment. The reasoning given is that it is better to have a large mortgage payment. This is because, in the absence of a mortgage payment, the investor might just spend all the money and not be left with anything. However, the investor fails to take into account that initial mortgage payments are mostly made up of interest payments. Hence, their forced savings plan is not causing them to save money at all! The fear and lack of confidence cause investors to make irrational decisions.

Investors with self-control bias often do not have an investment plan. Instead, their investment decisions are a bunch of ad-hoc decisions that are made in the spur of the moment. The reality is that in the financial world, failing to plan equals planning to fail.

Investors with self-control bias must be sensitized that it is important to have realistic assumptions. Their portfolio allocation should not be made based on their risky decisions. Instead, a scientific approach should be followed to decide their debt-equity mix based on the stage of life that they are in.

The bottom line is that self-control bias is not small or frivolous. Like other behavioural biases, this bias also has a huge impact on the portfolio of the investor as well as the return that they gain from it.

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### Cognitive dissonance

**Cognitive dissonance** refers to feelings of conflict or unease experienced by an individual when they are unsure about something. Therefore, post purchase cognitive dissonance refers to this feeling after buying a service or goods. Typically, during post purchase cognitive dissonance we experience something we did not expect which causes us to reflect and question our decisions, choices, and the value we have received.

As an investment adviser/ manager with ongoing client relationships, it is very important to be aware that your clients may experience this. Cognitive dissonance is relevant on an ongoing basis throughout the course of your relationship in which you are involved in with your client.

**Logical inconsistency**

**Logical inconsistency** refers to two cognitions (thoughts) considered to be logical but do not fit together if both are true. This is another example of the conflict causing dissonance. For example, a client may think that they want to enjoy the highest quality of life they can whilst they are healthy and also want to put them in the best financial position possible for the future. It is this doubt and inner conflict that causes cognitive dissonance.

**Rationalisation**

In order to relieve cognitive dissonance a client is likely to go through rationalisation in which they seek additional information which is supportive or consistent with behaviour (including two-sided arguments). For instance, they may consider their current quality of life as well as assess how much they can expect to save for their future in order to give them the quality of life they desire. This rationalisation process is intended to reach a conclusion and relieve cognitive dissonance by providing reassurance.

One technique which could occur at a time where individuals may feel cognitive dissonance is when clients receive a statement and breakdown of their fees, as this is when they will reflect on the value they are receiving from you. The hidden fees unknown to investor that is charged by distributors of mutual funds and other insurance products may not cause as much of cognitive dissonance as compared to a direct fee charged by a regulated investment adviser who is not permitted to make money by distributing financial products to its clients. Thus, distributors of financial products outnumber independent investment advisers in India, when the latter are far better for the investors both from cost perspective and from the perspective of independence and conflict of interest.

### Hindsight Bias

**Hindsight bias** is a mistaken belief that outcomes were (and are) predictable. Investment analysts are particularly susceptible to this bias. Hindsight bias is demonstrated by those who remember their forecasts that turned out to be accurate and forget those that were inaccurate. This can lead to excessive risk-taking due to an irrationally high assessment of one’s ability to correctly predict outcomes.

The usual subjects of hindsight bias are not on that scale. Any number of investors who had the passing thought, sometime in the 1980s, that Bill Gates was a bright guy or that a Macintosh was a neat product may deeply regret not buying stock in Microsoft or Apple way back then when they "saw it coming." Actually, they may suffer from hindsight bias.

Investors should be careful when evaluating their own ability to predict how current events will impact the future performance of securities. Believing that one is able to predict future results can lead to overconfidence, and overconfidence can lead to choosing stocks not for their financial performance but on a hunch.

Hindsight bias can distract investors from an objective analysis of a company. Sticking to intrinsic valuation methods helps them to make decisions on data-driven factors and not personal ones. Intrinsic value refers to the perception of a stock’s true value, based on all aspects of the business and may or may not coincide with the current market value. An intrinsic valuation will typically take into account qualitative factors such as a company’s business model, corporate governance, and target market. Quantitative factors such as financial statement analysis offer insights into whether the current market price is accurate or if the company is overvalued or undervalued.

### Outcome

When we evaluate the quality of a decision based solely on the outcome, we make an error, called the Outcome Bias. Outcome bias can be more dangerous than hindsight bias in that it only evaluates actual outcomes. For example, an investor decides to invest in real estate after learning a colleague made a big return on an investment in real estate when interest rates were at a different level.

As investors, we must avoid the mistake of getting anchored to the outcome, while evaluating the decision. We may end up giving credit to the wrong decision just because it turned out good. An outcome bias also reduces the capacity to take contrarian bets.

Money managers or investors may avoid going against the crowd in the fear, anguish or regret of being wrong. Many may prefer to fail conventionally rather than take any risks of doing something different.

Investors often choose investments based purely on past performance (i.e., the end result) and do not consider what contributed to this outcome. For example, the recent returns of a particular bond may look better than others, and they may create the temptation to invest. However, the bond’s higher risk may easily explain the performance. By investing based on past performance alone, one may end up accepting a level of risk beyond one’s investment risk tolerance and risk comfort zone. Similarly, consider investing in an asset that is performing exceptionally well. It may mean investment in an overvalued asset. Even worse, a dramatic increase in an asset’s price may mean that it is just a bubble about to burst. Gamestop and other ‘meme’ stocks are perfect examples. Another mistake associated with outcome bias is not investing in specific asset allocation strategies simply because their past results were poor. The respective strategy may be more profitable in the future because it relied on a sound investment approach, and its past performance was simply bad luck.

### Overvaluing outcome bias

This bias involves placing too much importance on the end result of a decision or action while neglecting the quality of the process that led to that outcome. It can lead to a failure to learn from mistakes or to make sound decisions based on flawed processes.

### Locus of Control bias

**Locus of control** refers to an individual's belief about the underlying causes of events in their life. The bias comes into play when individuals attribute events to either internal factors (internal locus of control) or external factors (external locus of control).

For example, someone with a strong internal locus of control might attribute their successes or failures to their own abilities, efforts, or decisions. On the other hand, someone with a strong external locus of control might attribute these outcomes to luck, fate, or external circumstances beyond their control.

This bias can influence decision-making, behaviour, and overall perception of the world, as individuals with different loci of control may approach challenges and opportunities in distinct ways.

# Chapter 5:

# Frame Dependence

Standard finance postulates that practitioners view all decisions through the transparent objective lens of risk and return. Indeed, frame independence lies at the core of the Modigliani–Miller approach to corporate finance. The essence of frame independence was put vividly by Miller as follows: ‘If you transfer a dollar from your right pocket to your left pocket, you are no wealthier. Franco and I put that rigorously.’ Frame-independent investors pay attention to changes in their total wealth because that eventually determines how much they can spend on goods and services.

In contrast, behavioural finance argues that, apart from objective considerations, practitioners’ perceptions of risk and return are influenced by how decision problems are framed.

There can be different ways of presenting a decision problem and it appears that people’s decisions are influenced by the manner of presentation. A decision frame represents how a decision maker views the problem and its possible consequences. To demonstrate frame dependence, Tversky and Kahneman posed simple problems like the following to their students.

The government estimates that 600 people will die due to a deadly outbreak of Asian flu, if nothing is done. To tackle this problem, the government is considering two alternative programmes.

* **Programme A**: Develop a vaccine which can save 200 lives.
* **Programme B**: Develop a vaccine which will stop anyone from dying provided it works.

The probability that it will work is one-third. If it doesn’t work no one will be cured.

When students were asked to choose one of the two programmes, 75% of them chose programme A. The risk of seeing all 600 victims die was considered too much to be compensated by the hope that all would be saved.

Kahneman and Tversky reformulated the question and posed it to a different group of students. To tackle the same health problem, two choices were offered:

* **Programme C**: Accept that 400 victims of the flu will die.
* **Programme D**: Cure all the 600 victims of the flu with a probability of one-third.
* When students were asked to choose between these two options, two-thirds of the students chose programme D. The statement ‘400 would die’ scared most students, even though it is actually the same outcome as that of programme A above, but expressed in more dire terms. It is evident that what matters it is not just what you ask, but also how you ask.

**Integration vs. Segregation**

In the examples given above, the questions were posed to suggest a particular reference point (e.g. lives saved or lives lost). However, in many cases, the decision maker himself chooses the reference point, and whether an outcome is considered as positive or negative will depend on the reference point selected by the decision maker. To illustrate, suppose that Mavjibhai has lost Rs. 4,500 on the horse track today. He is looking at the possibility of betting another Rs. 500 in the last race of the day on a horse, with 10:1 odds. If his horse wins, his payoff will be Rs. 5,000, but if his horse loses, he will lose another Rs. 500. The reference point that he chooses is very relevant. If he considers the previous losses of Rs. 4,500, the bet of Rs. 500 will enable him to break even if the horse wins, or result in a cumulative loss of Rs. 5,000, if the horse loses. Should he ignore the previous losses of Rs. 4,500 and consider the last race as a fresh bet, the outcome would be either a gain of Rs. 4,500 (5,000 – 500) or a loss of Rs 500. According to prospect theory, if Mavjibhai takes the first reference point, he is integrating the outcomes of all the bets of the day. Since he is in the domain of losses (of Rs. 4,500) and the last bet provides an opportunity to break even, he will tend to take the risk.

If Mavjibhai takes the second reference point, he is segregating the outcomes of different bets. In this case, he will tend to shun the risk, because the gamble crosses over between a loss and gain and loss aversion bothers him.

The less knowledgeable a person is about an issue, the more easily he is influenced about how it is framed. The British philosopher Herbert Spencer said “How often misused words generate misleading thoughts.” Our preferences are influenced by how a choice is presented. You are likely to choose a product that is presented as “95% fat free” rather than “5% fat.” Likewise, you are likely to choose a surgical procedure that has a 40% chance of success than one that has a 60% chance of failure. In general, our response depends on whether something is presented in terms of gains or in terms of losses.

An important theme of behavioural finance is frame dependence which holds that differences in form may also be substantive. An example of frame dependence is money illusion. To understand money illusion, let us look at the following questions from a 1997 study by Eldar Shafir, Peter Diamond, and Amos Tversky. Consider two girls Geeta and Seeta, who passed out from the same college a year apart and took up similar jobs. Geeta started with a yearly salary of Rs. 30,000. After one year; during which there was no inflation, Geeta got a 2 per cent (Rs. 600) raise in salary. Seeta too started with a yearly salary of Rs. 30,000. After one year, during which there was 4 per cent inflation, Seeta got a 5 per cent (Rs. 1,500) raise in salary.

As they entered the second year on the job (a) Who was better off economically? (b) Who do you think was happier? and (c) Who do you think was more likely to leave her present job for another job? Most people think that Geeta is better off economically, Seeta is happier, and Geeta is more likely to leave her present job for another job. This is somewhat puzzling. Why is Geeta less happy and more likely to look for another position, if she is better off economically? According to Shafir, Diamond, and Tversky, although people know how to adjust for inflation it is natural for them to think in term of nominal terms. Hence, people’s emotional reaction is guided by nominal values, and those seem to be better for Seeta than they do for Geeta.

# Chapter 6:

# Inefﬁcient Markets

Standard finance postulates that the markets are efficient, meaning that the price of each security reflects its fundamental value. Behavioural finance contends that heuristics and biases and framing effects cause a divergence between fundamental values and market prices.

Irving Fisher was a leader of neoclassical economics and Wesley Mitchell a pioneer of institutionalists. Neoclassical economists build their theories through a process of deduction and institutionalists develop their findings through induction. Irving Fisher’s book The Nature of Capital and Income published in 1906, hailed as “one of the principal building blocks of all present day economic history,” established his international reputation.

As Justin Fox put it, “He is perhaps not the father, but certainly a father of modern Wall Street.” Irving Fisher was fascinated by the concept of equilibrium (in which competing influences balanced each other) which was crucial to the early development of chemistry and physics. Since equilibrium analysis lends itself naturally to mathematical treatment (all it takes is just an equal sign), it appealed to the mathematically inclined Fisher. His doctoral dissertation was the most sophisticated mathematical treatment yet of economic equilibrium, which Paul Samuelson lauded as “the greatest doctoral dissertation in economics ever written.”

Deeply influenced by physical sciences, Fisher also designed and built a contraption of inter-connected water-filled cisterns that he referred to as “the physical analogue of the ideal economic market.” By the way, Adam Smith’s notion of an “invisible hand” that steered selfish individuals toward producing socially beneficial results had hinted toward the concept of economic equilibrium.

In the early 1930s, John von Neumann, a Hungarian mathematician, wrote a paper on the mathematics of economic equilibrium which significantly reshaped the discussion of the subject. This perhaps provided the impetus to Kenneth Arrow and John Debreu to develop a far more logically consistent and mathematically sophisticated version of economic equilibrium.

The Arrow-Debreu model provided an elegant mathematical proof of the existence of Adam Smith’s invisible hand. More importantly, it allowed for uncertainty. To achieve equilibrium under uncertainty, they assumed the existence of “complete” securities market. A complete securities market is a market in which you can bet on or insure against every possible future state of the world. A “complete” securities market, however, does not exist in the real world and Arrow spent the rest of his academic career in exploring the consequences of the divergence between economic reality and economic theory.

Until the late 1950s, finance was taught in business schools as a mix of common sense, institutional practices, judgment, and tradition that had very little to do with economics. This separation could be traced to the philosophy of Harvard Business School, set up in 1908, where its founding fathers were convinced that the new school should emphasise the practical, eschew academic theories, and rely on “case method” of teaching which it imported from Harvard Law School.

Things, however, began changing in the late 1950s. The task of reshaping the study of finance in the image of modern mathematical economics was begun by two conventional economists, Franco Modigliani and Merton H. Miller, who worked at Carnegie Tech’s new business school set up in early 1950s. Carnegie Tech (renamed CMU in 1967) had overhauled its engineering education in the 1940s to lay emphasis on scientific and mathematical rigour in place of the traditional rule-of-thumb trade school instruction. It planned to do the same for management education and hired promising young economists, operations research experts, and behavioural scientists.

Franco Modigliani and Merton H. Miller (M&M) wrote two seminal papers in which they developed mathematical theories based on rational behaviour and argued that the ‘capital structure’ policy and the ‘dividend’ policy of the firm did not matter under certain ideal conditions (no taxes, etc.). (Incidentally, both Franco Modigliani and Merton H. Miller became Nobel laureates in economics).

In the words of Robert Merton, another Nobel laureate in economics: “The Modigliani–Miller work stands as the watershed between ‘old finance’ an essentially loose connection of beliefs based on accounting practices, rules of thumb and anecdotes, and modern financial economics, with its rigorous mathematical theories and carefully documented empirical studies.” M&M, however, did not figure out how to calculate the cost of capital. In their celebrated 1958 paper, they said that the calculation of cost of capital “must be deferred to a subsequent paper.”

In 1953, Maurice Kendall, a distinguished statistician, presented a somewhat unusual paper before the Royal Statistical Society in London. Kendall examined the behaviour of stock and commodity prices in search of regular cycles. Instead of discovering any regular price cycle, he found each series to be “a wandering one, almost as if once a week the Demon of Chance drew a random number… and added it to the current price to determine the next week’s price.” Put differently, prices appeared to follow a random walk, implying that successive price changes are independent of one another.

In 1959, two highly original and interesting papers supporting the random walk hypothesis were published. In one paper, Harry Roberts showed that a series obtained by cumulating random numbers bore resemblance to a time series of stock prices. In the second paper, Osborne, an eminent physicist, found that the stock price behaviour was similar to the movement of very small particles suspended in a liquid medium—such movement is referred to as the Brownian motion.

A random walk means that successive stock prices are independent and identically distributed. Therefore, strictly speaking, the stock price behaviour should be characterised as a sub-martingale, implying that the expected change in price can be positive because investors expect to be compensated for time and risk. Further, the expected return may change over time in response to change in risk.

Inspired by the works of Kendall, Roberts, and Osborne, a number of researchers employed ingenious methods to test the randomness of stock price behaviour. By and large, these tests have vindicated the random walk hypothesis. Indeed, in terms of empirical evidence, very few ideas in economics can rival the random walk hypothesis.

One of the most important economists of all time, Paul Samuelson was, as he liked to say, “the last generalist in economics.” While financial market studies were just a side activity for him, his intervention was crucial to the triumph of the random walk. When the empirical evidence in favour of the random walk hypothesis seemed overwhelming, the academic researchers asked the question: What is the economic process that produces a random walk? Paul Samuelson, the consummate economic theorist, provided the answer in his paper, “Proof That Properly Anticipated Prices Fluctuate Randomly,” published in the spring 1965 issue of Industrial Management Review.

Eugene Fama came to Chicago as an MBA student in 1960. Prior to that he had studied at Tufts University where he crunched numbers for a stock market newsletter published by one of his professors. With this experience he was attracted by the random walk work of Harry Roberts, a statistics professor. Fama stayed on for his doctorate under the tutelage of Merton H. Miller. His 1964 doctoral dissertation laid out the clearest explanation yet of why stock prices behave randomly. According to Fama, stock prices did not behave randomly because news relevant to stock prices occurred randomly or investors’ opinions were randomly distributed along a bell curve. Rather, “sophisticated traders”—fundamentalists and chart readers—would profitably exploit any non-random patterns in the market and, in the process, make them go away. That meant chart-reading successes were necessarily fleeting. However, this was not necessarily true of what he called “superior intrinsic value analysts.” Fama wrote: “In a dynamic economy, there will always be new information which causes intrinsic values to change over time. As a result, people who can consistently predict the appearance of new information and evaluate its effects on intrinsic values will usually make larger profits than people who do not have this talent.”

Existence of enough “superior analysts” would, Fama said, “insure that actual market prices are, on the basis of all available information, best estimates of intrinsic values.” Fama called this state of affairs “efficient market.” While economists used this term earlier to denote a well- functioning market, it had never been defined quite this way. Fama wrote, “In an efficient market, the actions of many competing participants should cause the actual price of a security to wander randomly about its intrinsic value.”

After finishing his dissertation in 1964, Fama became a faculty at the Graduate School of Business (GSB), University of Chicago, and was joined by a whole new crowd of quantitatively- oriented, computer-savvy students who were beginning to make waves. Michael Jensen, Myron Scholes, and Richard Roll were amongst the most prominent of them.

Jensen, Scholes, and Fama pioneered an approach that became known as “event study” to test how quickly the market reacted to new information relating to events such as stock splits, mergers and acquisitions, corporate earnings announcements. Numerous such studies established beyond reasonable doubt that financial markets did a wonderful job of reflecting new information.

In 1960, Engels wanted to run an ad claiming that stocks were good investments for ordinary investors, but Securities Exchange Commission (SEC), the regulatory body in the US, told Engels that such a claim could be made only with proper evidence to support it. Engels called his alma mater GSB, University of Chicago for advice and spoke to James Lorie. After consulting with a few colleagues, Lorie suggested that a study of long-term stock returns was in order. Engels agreed and Merrill Lynch funded the Center for Research on Security Prices, which came to be known popularly by its acronym, CRSP (pronounced “crisp”). James Lorie headed the centre and chose Lawrence Fisher as his deputy.

Fisher embarked on the herculean task of compiling thirty-five years of price and dividend data on every stock ever traded on NYSE. After more than three years of painstaking work, they reported in January 1964 that, over the period 1926-1960, stocks earned an average return of 9 per cent. They went further and found that randomly generated portfolios performed as well as mutual funds-put more colourfully, monkeys with darts could match the performance of mutual funds. This was indeed a revelation.

As Business Week reported: “For a sizable area of Wall Street-mutual funds, security analysts, investment advisers and the like—the study should prove unsettling. Everybody in this area makes his money, to one degree or another, by selling his skill to less expert.”

In a speech at the twenty-fifth anniversary of the New York Society of Security Analysts in 1962, Benjamin Graham said, “Neither the Financial Analysts as a whole nor the investment funds as a whole can expect to ‘beat the market,’ because in a significant sense they (or you) are the market.” He continued, sounding somewhat like a Chicago economist: “Analysts do in fact render an important service to the community in their study and evaluation of common stocks. But this service shows itself not in spectacular results achieved by their individual selections but rather at fixing at most times and for most stocks of a price level which fairly represents their comparative values, as established by the known facts and reasonable estimates about the future.”

The imprudence of investors in the 1960s showed up in the 1970s, when neither bonds nor blue chips proved safe, providing a huge scope for the new approach to risk, return, and diversification developed by Harry Markowitz two decades earlier. Called ‘modern portfolio theory,’ (MPT) it gained some acceptance in the institutional world of investing and then received a huge boost from Washington.

In MPT, risk is defined as variance and not as a vague, hard-to-quantify thing that can be assessed only judgmentally. As a number, variance is estimated mainly by looking at past variability. This may appear somewhat odd: While finance scholars argued that future stock price movements cannot be predicted by looking at past stock price movements, they accepted the idea of using past stock volatility to predict future stock volatility.

Perhaps there was a reason. As Fischer Black, a prominent risk engineer of the 1970s, said: “Estimating variances is orders of magnitude easier than estimating… expected returns.” There is no economic law that says volatility is predictable; at the same time, there is no economic law that says that volatility is not predictable. As Justin Fox remarked: “If the direction of stock prices could be predicted, there would be free lunch for all. If the volatility could be predicted, that just meant more work for finance professors.”

Further, there was empirical evidence that long-run stock price volatility displayed reasonable constancy, despite the leaps and plunges suggested by Benoit Mandelbrot. Based on an examination of a century of stock market data, Barr Rosenberg of UC-Berkeley observed:

“If you cut it in half, basically the variance in the first half and the variance in the second half were the same. That’s not by chance. That means that our particular society settles in with a certain amount of surprise being acceptable and indeed interesting. Too much is too much, too little is too little, so that’s quite mysterious.”

With the ascendance of modern portfolio theory, the demand for quantitative finance services grew. Barr Rosenberg offered “Barr’s better betas” (also called “bionic betas”) which were more acceptable to money managers than the simpler versions offered earlier. Ibbotson Associates provided data on “equity risk premium.”

Armed with Barra’s (or some other firm’s) measure of a stock’s beta and Ibbotson’s measure of equity risk premium, one could compute a company’s cost of capital. Remember that when Franco Modigliani and Merton Miller launched their assault on old-style finance in the 1950s, they had left the issue of cost of capital unanswered. Later a procedure to do that evolved and it soon became the standard practice for investment bankers, consultants, corporate finance executives, and students.

By the mid-1950s, economists in general accepted von Neumann and Morgenstern’s expected utility and Henry Savage’s statistical axioms as gospel truth and built their models on these foundations. In 1950s, Herbert Simon, an economics maverick at Carnegie Tech’s Graduate School of Industrial Administration (GSIA), who later got Nobel Prize in economics, argued that people don’t have the brainpower and time to make decisions so they take shortcuts and rules for them. People don’t “optimise,” but “satisfice” (a combination of “satisfy” and “suffice”). Since Simon was a leading light at GSIA, the economists there listened to him, but chose to ignore him. As Simon wrote in his memoirs, “I heckled the GSIA economists about their ridiculous assumptions of omniscience and they increasingly viewed me as the main obstacle to building ‘real’ economics in the school.”

Simon led a project on decision making process in a paint factory in Pittsburgh, following his “satisficing” approach in which he enlisted fellow faculty member Franco Modigliani and Modigliani’s student John Muth. No sooner was the study over, Muth fought back: “It is sometimes argued that the assumption of rationality in economics leads to theories inconsistent with, or inadequate to explain, observed phenomena, especially over time… Our hypothesis is based on exactly the opposite point of view: those dynamic economic models do not assume enough rationality.” Muth argued that even though every individual or corporation need not make rational guesses about the future, on average, they were similar to the predictions of the most sophisticated models.

This “rational expectations” hypothesis was akin in spirit to the efficient markets hypothesis, although it had a broader sweep and less evidence to support it. Initially, it went nowhere, but as Keynesian economic policy faltered in the 1970s, several scholars, notably Robert Lucas, propagated it. With amazing rapidity, rational expectation model became the credo at the Chicago Economics Department. Even Paul Samuelson admitted that if compelled to choose between the “two extreme archetypes” of old-style Keynesianism and Lucas’s rational expectations, he would choose the latter.

While Herbert Simon’s disputes with mainstream economists triggered the rational expectations hypothesis, Daniel Kahneman and Amos Tversky built upon Simon’s ideas to challenge mainstream economics and its reliance on von Neumann and Morgenstern’s version of decision making under uncertainty. Daniel Kahneman, a psychologist, felt that human statistical reasoning might not accord with the models used in economics. He along with Amos Tversky began conducting experiments which revealed gaps between the tenets of decision making and actual decision making by even experts. They wrote “People rely on a limited number of heuristic principles which reduce the complex tasks of assessing probabilities and predicting values to simpler judgmental operations. In general, these heuristics are quite useful, but sometimes they lead to severe and systematic errors.” Put simply, people follow shortcuts and rules of thumb that sometimes work and sometimes don’t.

Kahneman and Tversky argued that von Neumann and Morgenstern’s description of decision making under uncertainty was not correct. How do then people really assess uncertain prospects? Kahneman and Tverksy provided the answer in their article on “prospect theory” published in Econometrica, perhaps the most mathematical of the major academic journals in economics. The article was rigorous and filled with equations and hence, appealed to mathematically-inclined economists and the choice of Econometrica turned out to be very propitious as it attracted the attention of economists. As Justin Fox put it, “It had just what it took to become a hit among economists who were getting more and more interested in asking subversive questions but didn’t want to lose their chance at tenure by sounding too much like psychologists.”

Richard Thaler was the first and most eager among the economists who were deeply influenced by the work of Kahneman and Tversky. Hersh Shefrin, Meir Statman, and Werner De Bondt and a few other adventurous young economists at other schools joined this movement which came to be called behavioural economics, despite its moorings in cognitive- not behavioural-psychology. Among established economists, George Akerlof of UC-Berkeley was probably the most supportive.

In his famous 1954 essay on economic methodology, Milton Friedman dismissed the use of questionnaires (that psychologists employ) and experiments (of hard sciences) for economists. The former were too silly, and the latter not feasible. Behavioural economics challenged the first judgment and experimental economics sought to overturn the second. Edward Chamberlin of Harvard and his student, Vernon Smith, pioneered the development of experimental economics. In 2002, Vernon Smith shared the Nobel prize in economics with Daniel Kahneman.

The growing body of evidence documenting systematic departure from the dictates of rational economic behaviour prompted a Chicago conference on “the behavioural foundations of economic theory.” Stars from both sides of the rationalist divide, including the redoubtable Merton Miller, were present. In his paper, Miller admitted that cognitive psychology might explain why some individual investors and individual corporations might depart from rationality. But finance was not about such explanations. He argued “That we abstract from all these stories in building our models is not because the stories are uninteresting, but because they are too interesting and thereby distract us from the pervasive market forces that should be our principal concern.” The market, he asserted, was rational because the “pervasive market forces” pushed security prices toward their correct, fundamental values.

From mid-1960s the rational markets hypothesis gained ascendance and increasingly dominated public debate, government decision-making, and private investment policy up to 2008. As J.M. Keynes had written long back, “The ideas of economists and political philosophers, both when they are right and when they are wrong, are more powerful than is commonly understood.” He further added, “Indeed the world is ruled by little else. Practical men, who believe themselves to be quite exempt from any intellectual influences, are usually the slaves of some defunct economist.”

In 1985, Andrei Shleifer, an MIT graduate student, thought that he had assembled convincing evidence against the efficient markets hypothesis. He discovered that, beginning September 1976 – Vanguard had launched the first retail index a month before that – the new stocks being added to the S&P 500 performed better than the rest of the market. Since nothing had changed about these businesses in terms of their intrinsic value, such things should not happen in an efficient market.

Shleifer presented his findings at the annual meeting of the American Finance Association. Myron Scholes, who was asked to critique the paper, said: “This paper reminds me of my rabbi back in Palo Alto. My rabbi, when he gives his sermon on Saturday, always begins with a little story about something that happened to his family back in the shtetl, and then he generalises from that little episode to some big moral about the whole world. That’s what this paper reminds me of. It’s rabbi economics.”

This criticism ringed like Merton Miller’s argument about the need to focus on “pervasive forces” and not anomalous quirks. Shleifer took the criticism seriously and began his quest for pervasive market forces that caused market irrationality. Shleifer, a prolific researcher, had other interests as well. He published path-breaking articles on corporate governance, the economics of transition (from communism to market economies), and macro-economics. In 1999, he won the John Bates Clark Medal as the top American economist under forty.

Despite his forays into other areas, Shleifer continued his quest for an explanation which was more than ‘Rabbi economics.’ He was looking for “pervasive forces” rather anomalous quirks. And that pervasive force, according to Shleifer and his co-researcher Robert Vishny was the presence of “noise traders” and the “limits to arbitrage.”

The argument of behavioural scientists rests on two key assumptions:

1. Some investors—they call them noise traders—are not rational as their demand for risky assets is influenced by beliefs or sentiments that are not fully supported by fundamentals.
2. Arbitrage operation by rational investors tends to be limited as there are risks associated with it.

Richard Thaler, a leader of behavioural economics, wrote a regular column for the Journal of Economic Perspectives, a publication started in 1987 by the American Economic Association to update increasingly specialised economists on developments in different corners of the discipline. Joseph Stiglitz, one of the founding editors, gave Thaler more space in an “attempt to broaden the horizons of the profession.”

Thaler’s growing clout made him a prized commodity. GSB, University of Chicago appointed him as a professor of behavioural sciences, because Merton Miller opposed his appointment as a finance faculty. Of course, nothing could stop a professor of behavioural sciences from teaching and writing about finance, which Thaler did. He even began practising finance by co-founding Fuller & Thaler Asset Management which was managing several billion dollars using strategies based “the behavioural edge.”

Thaler became a respected, wealthy professor at the school that still regarded itself as the bastion of modern neoclassical finance. The award of Nobel Prize in economics to Daniel Kahneman (Thaler’s close friend and psychology mentor) and Vernon Smith, an experimental economist, added further legitimacy to Thaler’s work.

At a session honouring Irving Fisher during the 1997 meeting of the American Economic Association, Thaler described how the writings of Irving Fisher, the forefather of modern finance, were infused with behavioural reasoning. He said, “Fisher… helped… introduce mathematics to economics. Young economists are taught modern concepts (equations, diagrams and the like) but rarely go back and read the surrounding text…. It is time to stop neglecting the words and time to start updating our equations to include these behavioural factors.”

Thaler joined forces with Chicago law professor Cass Sunstein to apply behavioural ideas to other areas. They called their guided approach “libertarian paternalism,” and demonstrated how it could improve Medicare prescription plans, lending regulation, public schools, and marriage. This approach had significant influence.

As Justin Fox put it, “Just as the law and economics movement that emerged from Chicago gave intellectual backing to the great deregulation of the 1970s through the 1990s, Sunstein became a leading proponent of a new behavioural law and economics movement that aimed to guide a rethink of law and regulation.” When Obama was elected as the President of the U.S. in 2008, he appointed his friend Sunstein as his regulation czar. David Cameron, leader of Conservative Party in U.K., became an outspoken fan of Thaler and Sunstein’s work.

While behavioural research passed the test of scientific usefulness, some concerns still remained:

* Politicians and bureaucrats are also people, subject to behavioural flaws. Can they be expected to steer other’s decisions?
* The bulk of research in finance still revolves around markets and prices, not individual decisions. Does behavioural theory offer any answers here?
* The bounty of behavioural quirks creates a problem. As Merton Miller would say, “There’s only one theory of efficient markets… There are hundreds of theories of inefficient markets.” Justin Fox put it differently: “One could come up with a plausible sounding behavioural explanation for just about every market phenomenon. But if they were all different, that didn’t amount to much of a theory of market behaviour.”

Despite these concerns, behavioural finance is clearly more than just a collection of curiosities, or self-cancelling tendencies. According to behavioural research, the most consistent human trait is overconfidence, which persuades investors to think that they know more about a stock’s value than they actually do. Overconfidence explains excess volatility, momentum, and huge trading volumes.

Overconfidence, however, does not provide a theory of asset prices. It only explains why asset prices overshoot their fundamentals, a view that can coexist with efficient markets hypothesis defined somewhat loosely. Fama wrote in 1965, “In an efficient market, the actions of many competing participants would cause the actual price of a security to wander randomly about its intrinsic value.” Even behaviourists subscribed to this idea, except that they argued that this wandering can cause discrepancy between security prices and intrinsic values for years on end. As John Maynard Keynes observed decades ago that the market can remain irrational much longer than investors can remain solvent.

Even Fama and Kenneth French seemed to veer to this when they looked at what would happen in a market with lots of “misinformed” investors in a theoretical paper published in 2007. They wrote, “Offsetting actions by informed investors do not typically suffice to cause the price effects of erroneous beliefs to disappear with the passage of time.” They added, “For price to converge to rational values, the beliefs of misinformed investors must converge to those of the informed, so eventually there is complete agreement about old news.”

In October 2008, Alan Greenspan, the most influential central banker ever, admitted that he erred in understanding how the world works, “That’s precisely the reason I was shocked, because I had been going for forty years or more with considerable evidence that it was working exceptionally well.” During these forty years, the notion that financial markets were rational held sway and profoundly influenced public policy. The faith in the wisdom of financial markets led to an explosion of new financial instruments and increasing financialisation of the global economy. Celebrating this development, Alan Greenspan commented, “These instruments enhance the ability to differentiate risk and allocate it to those investors most able and willing to take it.”

**Adaptive Market Hypothesis**

According to Andrew Lo, the neuroscientific perspective suggests an alternative to EMH which he calls the Adaptive Market Hypothesis (AMH). The essence of AMH is that the interaction between market forces and preferences results in a much more dynamic economy, which is driven by competition, natural selection, and diverse individual and institutional behaviour. Of course, the application of evolutionary ideas to economic behaviour is not new.

Thomas Malthus invoked biological arguments to predict dire economic consequences; Joseph Schumpeter used notions of “creative destruction” and “bursts” of entrepreneurial activity which had an unmistakable evolutionary flavour to them; Elredge and Gould proposed the idea of “punctuated equilibrium”; Wilson systematically applied the principles of competition, reproduction, and natural selection to explain certain kinds of human behaviour; Niederhoffer likened financial markets to an ecosystem with speculators as carnivores, dealers as herbivores, and floor traders as distressed investors and decomposers; and Bernstein argued that evolutionary processes provide a better explanation for market dynamics.

Derived from evolutionary principles, the AMH can be viewed as a new version of the EMH. The AMH takes a biological, not physical, view of markets.

According to Andrew Lo, the principal architect of the AMH, “The primary components of the AMH consist of the following ideas:

(A1) Individuals act in their own self-interest.

(A2) Individuals make mistakes.

(A3) Individuals learn and adapt.

(A4) Competition drives adaptation and innovation.

(A5) Natural selection shapes market ecology.

(A6) Evolution determines market dynamics.”

**Key Insights and Implications of the AMH**

The key insights and implications of the AMH are:

1. Prices reflect as much information as dictated by the combination of environmental conditions and the ecology of the market (the number and nature of species in economy).
2. The convergence to equilibrium is neither assured nor likely to occur at any point of time – this is the key insight from evolutionary biology. As Andrew Lo put it, “The notion that evolving systems must march toward some ideal stationary state is plain wrong. In many cases, such equilibria do not exist and even when they do, convergence rules may be exceedingly slow, rendering the limiting equilibria virtually irrelevant for all practical purposes.”
3. Behavioural biases on account of heuristics are very common.
4. To the extent that a relation exists between risk and return, it is not likely to be stable over time. This means that equity risk premium is time-varying and path dependent.
5. Aggregate risk preferences are not fixed but shaped by the forces of natural selection.
6. While there are no arbitrage opportunities in the classical EMH, in the AMH arbitrage opportunities do arise from time to time. As Sandy Grossman and Joseph Stiglitz argued persuasively, without arbitrage opportunities there will be no incentive to gather information leading to a veritable collapse of price discovery in financial markets.
7. The EMH predicts an inexorable trend toward higher efficiency, but the AMH implies a far more complex market with cycles, trends, bubbles, crashes, and other phenomena. Such complex market dynamics provide motivation for active management according to Peter Bernstein.
8. Investment strategies will wax and wane, doing well in certain environments and poorly in others.
9. Under certain market conditions, for certain investors active asset allocation policies may make more sense.
10. The bottom line in the AMH is survival and innovation is the key to survival. As Andrew Lo put it: “The AMH has a clear implication for all financial market participants: survival is ultimately the only objective that matters. While profit maximisation, utility maximisation, and general equilibrium are certainly relevant aspects of market ecology, the organising principle in determining the evolution of markets and financial technology is simply survival.” The imperative for survival suggests that managers and consultants must maintain a certain degree of breadth and diversity in their skill and focus.

It is part of capital markets folklore that small individual investors are ‘dumb’. Behavioural research too paints a ‘sorry picture.’ It suggests four classes of weaknesses characterising individual investor behaviour.

**Perception of Price Movements**

People tend to:

* Spot trends and see patterns where none exist.
* Naively extrapolate recent behaviour on the future.
* Perceive likely variation in equity returns to be too narrow.
* Be overconfident of their prediction because they anchor too much on their most likely forecast.

**Perception of Value**

Most individuals

* Do not have an adequate understanding of or ability to use the valuation techniques recommended in finance texts.
* Perceive value on the basis of popular models or mental frames that are socially shared through stories in the news media.
* Cannot distinguish good stocks from good companies.
* The basic problem is that too many people have a short-term orientation and judge a book by its cover.

**Managing Risk and Return**

People do not manage their risk and return optimally. This is manifested in the following:

* Many households are under-diversified, ignoring the important lesson of modern portfolio that ‘diversification pays.’
* The idea that risk is defined at the portfolio level—and not at the level of individual assets—and that risk depends on co-variation between returns is alien to many investors.
* Many people believe that after committing their funds they can manage risk through knowledge and trading skills.
* Most households over-invest in riskless assets, foregoing the attractive long-term returns offered by stocks. When confronted with price volatility, they act myopically. Prospect theory explains this puzzle.

**Trading Practices**

Seasoned traders use a variety of rules and pre-commitment techniques, such as stop-loss order, to control emotion and discipline themselves. Most individuals, however, lack such discipline. They trade shares on impulse or on random tips from acquaintances, without prior planning. Their trading sentiment trails the market: they tend to buy when the market rises and sell when the market falls. Such trading mistakes suggest that people are unjustifiably optimistic about almost everything that concerns their personal lives.

**Indian Retail Investors Tend to Lose in Stock Markets**

A study ‘Do retail investors in India make rational investment and portfolio decisions,’ done by the Indian School of Business, under the leadership of Sankar De, examined the daily trade data of one million retail investors (considered as the largest sample used in an empirical study in behavioural finance) who collectively carried out 1.4 billion trades, with a total value of ` 37 lakh crore between January 2005 and June 2006.

The study found that individual retail investors consistently chase a zero rate of return on their stock investments when they decide themselves. The study attributed the dismal performance of retail investors to ‘disposition effect’ (selling the winners too quickly and holding on to the losers too long) and ‘overconfidence’ (taking credit for good decisions and attributing bad decisions to luck).

Securities and Exchange Board of India has found that astonishingly high i.e. more than 90% of the retail investors lose money the derivatives market and has warned retail investors on the same through all brokers through whom the retail investors do the trade. However, despite the warning, retail investors are ever increasingly investing in derivatives market in India and continue to lose money.

Daniel Kahneman on the Investment Game: “What’s really quite remarkable in the investment world is that people are playing a game which, in some sense, cannot be played. There are so many people out there in the market, and the idea that any single individual without extra information or extra market power can beat the market is extraordinarily unlikely. Yet this market is full of people who think they can do it and full of other people who believe them. This is one of the great mysteries of finance: Why do people believe they can do the impossible? And why do other people believe them?”

In the future, tools such as Artificial Intelligence tools may assist the retail investors to reduce biases and improve the returns on their long term investments.

# Chapter 7:

# Risk Profiling

To reduce the risk of mis-selling by distributors of financial products, wealth managers, investment advisers and other managers, the regulators require a risk profile to be done of the investor and only such products showcased to the investor that meets the risk profile so assessed of the investor.

Risk can be defined in various ways. Risk can be defined as an adverse event. Another definition that is often used by investment analysts is the possibility that the results obtained deviate from the expected. Perceptions of risk tend to be influenced by cognitive biases that arise from ways of thinking or thumb rules (heuristics) that act as shortcuts to enable fast processing and simplification of information. This heuristic often emphasizes the individual's fear arising from the possibility of a lack of information or control. Perception of risk is the view of individual investors on how much risk will be obtained when making investment decisions. In the midst of uncertainty, risk perception plays an important role in individual behaviour. Risk perception is very dependent on the psychological characteristics and circumstances of each individual.

In the behavioural context, tensions exist between the willingness to take risk (risk appetite) and the ability to take risk (risk capacity) as they are defined in terms of known and unknown risks.

Usually risk profiling is accomplished by standard risk questionnaire required to be filled up by the existing or prospective investor client. This standard process of risk profiling through questionnaires is highly unreliable to protect the interests of the investors which is the intention of the regulators. Firstly, there is a significant influence of the investment bank/ advisor/ manager present during this process of risk profiling and they are inherently interested in seeking a higher risk category profiling of the investor so that they can sell products or services which are riskier and brings more revenue for them. Secondly, the design of the questionnaires, which focus on socioeconomic variables and hypothetical scenarios to elicit the investor’s behaviour. In contrast, research in risk profiling has shown that several other factors can provide more accurate and reliable insight into the risk profiles of investors.

Among these factors are (1) the investor’s lifetime financial experiences (including the most recent period’s return and volatility of markets), (2) the investor’s past financial decisions, and (3) the influence of family, friends, and advisers. An additional factor, which is important, is the psychological temperament of the individual investor. With a better understanding of behavioural finance vis-à-vis risk taking, practitioners can enhance their understanding of client preferences and better inform their recommendations of investment strategies and products.

Risk appetite means the willingness to take risk and risk capacity means the ability to take risk. In the behavioural context, we need to further define risk appetite and risk capacity in terms of known risks and unknown risks. The reason is that, in general, when clients can at least understand and measure risks they are taking (i.e., known risks), they can accept the results. When the risks they believe they accepted include outcomes that are outside the bounds of what they expect or can reasonably understand (i.e., unknown risks), behavioural problems often begin.

Risk appetite is the amount of risk that one is willing to take in pursuit of reward. Risk appetite varies according to expected return; it may be expressed qualitatively and/or quantitatively. Investors with a high risk appetite focus on the potential for significant gains and are willing to accept higher possibility or severity of loss. Conversely, investors with a low risk appetite are risk averse and focus on stability and preservation of capital. Risk capacity can be thought of as the ability to absorb losses without having one’s financial goals jeopardized.

The level of both risk appetite and risk capacity varies by individual; obviously, investors should not define their risk appetite without considering their risk capacity, but sometimes they do. In the end, risk capacity is the amount of risk a person can actually bear. On the one hand, an investor may have a high risk appetite but not have enough capacity to handle a risk’s potential volatility or impact. On the other hand, risk capacity may be high but the investor, given his desire for risk reduction, may decide to adopt a lower risk appetite. Investment Advisers/ Managers can get a handle on these issues with their clients relatively easily when risks can be understood and measured i.e known risk. Risk has another dimension, however, that is not so easily measured and is often associated with irrational investor behaviour—unknown risk.

Beyond risk appetite and risk capacity is another important frontier of risk that affects clients’ behaviour dramatically: known risk and unknown risk—that is, those risks that can be reasonably modelled and understood and those that cannot. One of famous quotes of all time in this regard is by Donald Rumsfeld, US secretary of defence under President George W. Bush, who said, “There are known knowns. These are things we know that we know. There are known unknowns. That is to say, there are things that we know we do not know. But there are also unknown unknowns. These are things we don’t know we don’t know.”

Often, people communicate that they have a certain risk appetite and risk capacity. But do the investment adviser/ manager and the client agree on what is meant by risk? How much known risk and how much unknown risk that the client can handle? Known risk is what we might call “normal risk”—risk we can comprehend easily and quantify using historical data from observations of financial markets. And then there is unknown risk, or “abnormal risk,” that occurs once every decade or two or a catastrophe and falls outside expectations. We can think of normal risk as one or two standard deviations from the normal. We can think of unknown risk as three or more standard deviations from the normal.

Although severe bear markets and crashes occur from time to time, it is probably best to think of 2007 to 2009 financial crisis and Covid 2020 as an unknown or abnormal risk. At that time, the actual portfolio return fell outside the expected range of most models based on a normal distribution of returns.

When a decision is made on how much risk to take (risk appetite) or a measurement is taken of how much loss can be tolerated without jeopardizing financial goals (risk capacity), unknown risk can cause investors to behave irrationally. People must consider their likely reaction to known risk, and especially unknown risk, to get a complete picture of their risk tolerance.

The least risk tolerant investors and the most risk tolerant investors are emotionally biased in their behaviour. In the middle of the risk scale are those who are affected mainly by cognitive biases. This dynamic should make intuitive sense. Emotion drives the behaviour of investors who have a high need for security (i.e., a low risk tolerance); they get emotional about losing money and are uneasy during times of stress or change.

****Similarly, highly aggressive investors are also emotionally driven people, who typically suffer from a high level of overconfidence and mistakenly believe they can control the outcomes of their investments. In between these two extremes are the investors who suffer mainly from cognitive biases and can benefit from education and information about their biases by making better investment decisions. With aggressive clients, the best approach is to deal with their biases head-on and discuss how their investment decisions will affect such emotional issues as family members, their legacy, and their standard of living.

**Table of Risk Tolerance and types of Biases**

|  |  |  |  |
| --- | --- | --- | --- |
| **Profile** | **Aggressive** | **Moderate** | **Conservative** |
| Tolerance | High | Medium | Low |
| Bias: | Emotional | Cognitive | Emotional |
|  | Overconfidence | Regret | Endowment |
|  | Self-control | Hindsight | Loss aversion |
|  | Affinity | Framing | Status quo |
|  | Illusion of control | Cognitive dissonance | Anchoring |
|  | Outcome | Recency | Mental accounting |
|  | Optimism | Confirmation |  |



### Aggressive investors

**Aggressive investors (AIs)** are generally entrepreneurial clients who are often the first generation in their family to create wealth. They are even more strong willed and confident than GIs. Very wealthy AIs have often been in control of the outcomes of their business activities and believe they can do the same with investing—they are overconfident. AIs often like to change their portfolios as market conditions change, which often creates a drag on investment performance. AIs are quick decision makers; they may chase higher-risk investments that their friends or associates are investing in. Some AIs do not believe in such basic investment principles as diversification and asset allocation; they are often “hands- on” and want to be involved in the investment decision making.

Aggressive investors are the most difficult clients to advise/ manage, particularly if they have experienced losses. Because they like to control, or at least get deeply involved in, the details of investment decision making, they tend to eschew advice that might keep their risk tolerance in check. And they are excited and optimistic that their investments will do well, even if that optimism is irrational. Some ACs need to be monitored for excessive spending, which, if out of control, can inhibit the performance of a long-term portfolio through withdrawals at inopportune times. In my view, the best approach to dealing with these clients is to take control of the situation. Advisers who let an aggressive client dictate the terms of the investment advisory/ management engagement will always be at the mercy of the client’s irrational decision making, and the result will likely be an unhappy client and an unhappy adviser. The Investment Advisers/ Managers need to prove to the client that they can make great, objective, long-term decisions and that they can effectively communicate the results. The Investment Advisers/ Managers who demonstrate the ability to take control of a situation will see their aggressive, emotionally charged clients fall into step and be better clients who are easier to advise.

### Moderate investors

**Moderate investors (MIs)** often do not have their own ideas about investing but instead follow the lead of their family, friends and colleagues in making investment decisions. They are comfortable with being invested in the latest, most popular investments, often without regard to a long-term plan. One of the key challenges of working with MIs is that they often overestimate their risk tolerance. Advisers need to be careful not to suggest too many “hot” investment ideas—MIs will likely want to do all of them. Some do not like, or even fear, the task of investing, and many put off making investment decisions without professional advice; the result is that they maintain, often by default, high cash balances. MIs generally comply with professional advice when they get it, but they can sometimes be difficult because they do not enjoy, or have no aptitude for, the investment process.

Clients with the biases of MIs need to recognize that they tend to follow the lead of others and may not have their own ideas about investing. Not fully grasping their own risk tolerance, they may simply run ahead with the task of investing. When an investment goes their way, they may convince themselves that they “knew it all along,” a view that also increases future risk-taking behaviour. Investment Advisers/ Managers need to handle MIs with care because they are likely to say yes to investment ideas that make sense to them regardless of whether the advice is in their best long-term interest. The investment Advisers/ Managers need to lead MIs to take a hard look at behavioural tendencies that may cause them to overestimate their risk tolerance. Because MI biases are mainly cognitive, educating MI clients on the benefits of portfolio diversification and sticking to a long-term plan is usually the best course of action. The Investment Advisers/ Managers should challenge MI clients to be introspective and should provide data-backed substantiation for their recommendations. Offering information to MI clients in clear, unambiguous ways so they have the chance to “get it” is a good idea. If advisers take the time, this steady, educational approach will generate client loyalty and adherence to long-term investment plans.

### Conservative investors

**Conservative investors (CIs)** place great emphasis on financial security and preserving wealth. Many have gained wealth through inheritance or by not risking their capital to build wealth (e.g., by working in a large company). Because they tend to be risk averse, CIs may be worriers; they obsess over short-term performance and are slow to make investment decisions because they are uncomfortable with change and uncertainty. This behaviour is consistent with their approach to their professional lives—they are careful not to take excessive risks. Many CIs focus on taking care of family members and future generations, especially by funding such life-enhancing experiences as education and homeownership.

CIs are difficult to advise because they are driven mainly by emotion. However, CIs are also greatly in need of good financial advice. Investment Advisers/ Managers should take the time to interpret the behavioural signs provided by CI clients. CIs need “big-picture” advice, and advisers should not dwell on such details as standard deviations and Sharpe ratios or else they will lose the client’s attention. CIs need to understand how the portfolio they choose to create will deliver the desired results concerning such emotional issues as family members and future generations. Once they feel comfortable discussing these important emotional issues with their adviser and a bond of trust is established, they will take action. After a while, CIs are likely to become an adviser’s best clients because they value greatly the adviser’s professionalism, expertise, and objectivity in helping make the right investment decisions. In addition, CIs can usually benefit from the added risk that a competent adviser persuades them to take so long as the adviser carefully monitors the risk and does not allow it to become too large.

# Chapter 8:

# Abstract – Survey on Behavioural Marketing

Human psychology has both positive and negative aspects. People who are optimistic and confident aim higher, take risks, work harder, and achieve great things. Optimism and confidence are generally considered as good attributes. However, you can have too much of a good thing that may prove adversarial. Unrealistic optimism and overconfidence are “behavioural biases” that predispose people to make mistakes. These traits are especially important in the context of planning. People tend to under-estimate the time and resources required for a task. Psychologists call this phenomenon the planning fallacy.

Overconfidence is fed by other psychological traits such as confirmation bias (people tend to overlook information that is contrary to their views in favour of information that confirms their views) and illusion of control (in general, people have an inflated view of how much control they have over future outcomes).

Is overconfidence not likely to get corrected in the wake of failures? It does not happen as much as it should. Why? People perhaps remain overconfident, despite failures, because they remember their successes and forget their failures, Harvard psychologist Langer describes this phenomenon as “head I win, tail it’s chance.” Referred to as self-attribution bias, it means that people tend to ascribe their success to their skill and their failure to bad luck. Another reason for persistent overconfidence and optimism is the human tendency to focus on future plans rather than on past experience.

Here are some examples of bad decisions caused by psychological biases.

* The acquisition of most of the businesses of ABN AMRO Bank N. V. by the Royal Bank of Scotland (“RBS”) after the global financial crisis started in the year 2007. While the failure of RBS post was initially termed as ‘systemic’ and caused by inadequacies in the global framework for bank capital regulation and the FSA’s supervisory approach, it was far from the truth. The FSA Board Report (the “FSA Report”), which investigated the causes of RBS’s failure, identified a number of underlying deficiencies. Those were management capabilities and style, governance arrangements, checks and balances, mechanisms for oversight and culture, in particular its attitude to the balance between risk and growth.
* The acquisition of Time Warner by AOL destroyed about $200 billion in shareholder value. In July 2006, on a television programme AOL’s CEO Charlie Rose admitted his mistake, saying “I’m sorry, I did it.”
* In his book State of Denial, published in 2006, Robert Woodward describes the serious mistakes President George W. Bush and secretary of defence, Ronald Rumsfeld, made in managing the war in Iraq. They remained in a state of denial, ignoring evidence that did not confirm with their beliefs.
* A lot of smart people have underestimated the threat of global warming because of psychological bias. Environmental activist Al Gore, a former U.S. vice-president and Nobel prize winner, created a successful film and associated book titled An Inconvenient

In this book, we apply research from behavioural science, and discuss how it can influence consumer behaviour which relevant for any business, especially from the perspective of marketing of its products. This book intends to offer readily available practical solutions for marketing professionals to nudge behaviour of clients in financial decision making and product choice.

Considering that the behavioural biases may work differently due to differences in education levels, the respondents of the survey consisted of 100 retail investors’ who opted to take the survey from a sample selected using purposive sampling method, with only graduates or post graduates with a minimum 5 years of investment experience.

A survey questionnaire was prepared drawing inspiration from the Iowa Gambling Task framework after individuals self-classified themselves as having one of the ‘big ﬁve' personality traits (without psychometric testing):

* **O**penness
* **C**onscientiousness
* **E**xtraversion
* **A**greeableness
* **N**euroticism (those with OCD/ Anxiety/ Nervousness).

Acronym, “**OCEAN**” is used in this paper, though these traits are not an exhaustive expanse of traits!

The eight cognitive and emotional biases (including certain heuristics) were tested through survey:

* **S**upport/ Conﬁrmation Bias
* **H**alo Effect Bias
* **A**nchoring & Adjustment Bias
* **M**ere Exposure Effect/ Familiarity Bias
* **B**andwagon Effect Bias
* **L**oss Aversion
* **E**ndowment Effect Bias
* **S**unk Cost Bias

Acronym, “**SHAMBLES**” is used in this paper, though a bias is not a state of total disorder!

The survey indicated that type and timing of products to be marketed to clients depend upon cognitive bias (or heuristics in decision making) of the individual and differs in people with different personality traits. The result shows that Bandwagon Effect, Halo Effect, Loss Aversion and Mere Exposure Effect biases have the most positive and significance influence toward investment decision. Among the four variables, Bandwagon Effect bias is the factor that has the greatest influence to the decision to invest. Individuals are more susceptible to certain bias on account of their personality traits as per the matrix below:

|  |  |
| --- | --- |
| **Bias**  **Trait** | **Highest susceptibility** |
| **Openness to Experience** | Anchoring, Bandwagon and Endowment Effect Bias |
| **Conscientiousness** | Anchoring and Loss Aversion |
| **Extroversion** | Confirmation, Halo Effect and Bandwagon Bias |
| **Agreeableness** | Halo Effect, Mere Exposure Effect, Bandwagon Bias |

Financial behaviour of investors is based on their cognitive, social and emotional influences. Multiple intellectual models have been tested on factors related to applied psychology, sociology and economic behaviour. These models are relevant for any broker-dealer and to marketing professional selling investment products. Understanding the personality traits, heuristics and cognitive biases form an important part in development of marketing strategy and offers potential commercial advantages in several of the following ways:

1. Optimising cross sell revenues or reduce client acquisition cost.
2. Increased conversions from targeted marketing.
3. Least client burn rates from cross selling (least interference risk).
4. Creating effective or innovative marketing campaigns.
5. Gaining market share in the industry.

A careful review of cognitive biases or judgements/ heuristics by individuals having different personality traits are most likely to have the highest impact on revenue and other business objectives, and quantified estimates of the benefits of using them should help managers make more informed decisions pertaining to consumer behaviour.

A good marketing strategy guides users through decision-making process with decisive messaging. Marketing through behavioural science is not about deceiving people or tricking them into buying something. It’s about understanding how people think and presenting your brand and products effectively – something that is increasingly difficult in a competitive market. Effective marketing may also attempt to reduce the bias. Behavioural science can help marketing professionals to increase sales and create better user experiences, retain customers and improve brand image. Thus, personality traits and cognitive biases should be an ideal focus of any successful marketing strategy. Every business will also have to consider its brand image and business ethics, marketing goals and the opportunities its products or services provide for exploiting behavioural science.

# Chapter 9:

# Survey

A total number of 100 clients of a retail broker-dealer participated in the survey. The survey questions requested for a self-declaration on one of the big-five personality trait and assessed the big eight cognitive and emotional biases. Survey questions prompted participants to select a preferred answer based on circumstances provided. Survey answers were analysed to identify decision patterns that could be explained by the cognitive and emotional biases.

Application of advanced statistical tools to analyse likelihood of bias was outside the scope of this paper on account of limited time frame for an extremely broad and generalised project proposed. Statistical methodologies such as chi-square or multiple linear regressions could have given more educated results on a narrower and bit more targeted project scope.

Some of the survey questions were based on inspiration from the Iowa Gambling Test (IGT) Framework, developed by Bechara, Damasio, Damasio and Anderson (1994) as a means to model decision-making in a realistic setting. The IGT framework usually involves probabilistic learning via monetary rewards and punishments, where advantageous task performance requires subjects to forego potential large immediate rewards for small longer-term rewards to avoid larger losses.

### Survey Questions

The survey questionnaire starts with a request for self-declaration of the individual’s personality trait as below:

**Question:** Please identify your behaviour with any one of the following personality trait (you cannot select more than one and select one that identifies you thebest):

1. **Openness to Experience:** You like to think in abstract, complex ways and love learning, enjoy arts, engage in a creative career or hobby, and like to meet new people. Select if you think you are/ you have/ you like:

* Imagination;
* Insightfulness;
* Varied interests;
* Originality;
* Daringness;
* Preference for variety;
* Cleverness;
* Creativity;
* Curiosity;
* Perceptiveness;
* Intellect;
* Complexity/depth.

1. **Conscientiousness:** You have a tendency to control impulses and act in socially acceptable ways, work within the rules, and plan and organise effectively. Select if you think you are/ you have/ you like:

* Persistence;
* Ambition;
* Thoroughness;
* Self-discipline;
* Consistency;
* Predictability;
* Control;
* Reliability;
* Resourcefulness;
* Hard work;
* Energy;
* Perseverance;
* Planning.

1. **Extroversion:** You have an inclination to seek stimulation from the outside world, especially in the form of attention from other people and engage actively with others to earn friendship, admiration, power, status, excitement, and romance. Select if you think you are/ you have/ you like:

* Socialness;
* Assertiveness;
* Merriness;
* Outgoing nature;
* Energy;
* Talkativeness;
* Ability to be articulate;
* Fun-loving nature;
* Tendency for affection;
* Friendliness;
* Social confidence.

1. **Agreeableness:** You have a tendency to put others’ needs ahead of your own, and to cooperate rather than compete with others. Select if you think you are/ you have/ you like:

* Altruism;
* Trust;
* Modesty;
* Humbleness;
* Patience;
* Moderation;
* Tact;
* Politeness;
* Kindness;
* Loyalty
* Unselfishness;
* Helpfulness;
* Sensitivity;
* Amiability;
* Cheerfulness;
* Consideration.

1. **Neuroticism:** You have a tendency to experience negative emotions, including fear, nervousness, sadness, anxiety, guilt, and shame or you have obsessive compulsive disorder. Select if you think you are/ you have/ you like:

* Awkwardness;
* Pessimism;
* Moodiness;
* Jealousy;
* Testiness;
* Fear;
* Nervousness;
* Anxiety;
* Timid;
* Wariness;
* Self-criticism;
* Lack of confidence;
* Insecurity;
* Instability;
* Oversensitivity.

Once self-assessment was done for behavioural traits, the survey questions were placed in a random order and for simpler understanding of its objectives.

These survey questions have been placed in a logical order below to determine the main cognitive bias the question tried to focus on.

Most questions involved cross-over of multiple biases with different severity or score points.

**Objective:** Check for Support/ Confirmation Bias

**Question 1**

|  |  |
| --- | --- |
| You have been investing in a reputed asset management company’s fund focussing on large cap stocks with good track record of performance. For the first time, they launch a scheme to invest in small cap stocks in which they have no past track record. | 1. Will you invest? 2. You will wait for some time, track the performance of new scheme and then invest. 3. You will avoid investment |

**Question 2**

|  |  |
| --- | --- |
| You have been investing in Indian stocks for many years and during this time you have marginally outperformed BSE SENSEX indices (though in some years your portfolio returns were lower than BSE SENSEX). BSE SENSEX is at an all-time high right now. Will you continue investing and believe you can outperform BSE SENSEX indices? | Yes/ No |
| How much will you be able to outperform the BSE SENSEX indices in the next 5 years? | 1. Don’t know 2. I will be happy with similar returns as BSE SENSEX. 3. Up to 2% p.a. higher 4. More than 2% p.a. |

**Question 3**

|  |  |
| --- | --- |
| You here a rumour that a company is on the verge of defaulting on its loans with market price of stock crashed. You go online to search for news and media states possibility of a default looming large on the company. What do you do next? | 1. Sell the stock immediately 2. Search more news or research reports 3. Hold the stock |

**Objective:** Check for Halo Effect Bias

**Question 4**

|  |  |
| --- | --- |
| One of your investment advisers have almost always been right on stock selection. Since you are looking for a good fixed income product, he suggests you to take up an insurance policy which gives the best risk adjusted fixed income returns. What will you do? | 1. Invest. 2. Will you do more research since you will doubt as to how an insurance policy is giving fixed income returns? 3. You will ignore his advice |

**Question 5**

|  |  |
| --- | --- |
| The promoter group of your favourite stock in which you have made good money comes with an offer for sale to public of their stake in a sister concern. You do not like the industry it is in. What will you do? | 1. Invest in the offering 2. Research the offering 3. Avoid it |

**Question 6**

|  |  |
| --- | --- |
| You hear a rumour that a company is on the verge of defaulting on its loans and market price of stock has crashed. You go online to search for this news and media states possibility of a default looming large on the company. What do you do next? | 1. Sell the stock immediately 2. Search more news or research reports 3. Hold the stock |

**Objective:** Check for Anchoring and Adjustment Bias

**Question 7**

|  |  |
| --- | --- |
| You mutual fund investment has tripled in the last decade (even though with volatile returns including negative returns in the interim). You earn a big bonus and are evaluating investment options. Where will you invest? | 1. Allocate a large portion to the same performing fund. 2. Allocate a small portion to the same performing fund. 3. Avoid your existing performing fund completely to diversify your portfolio of investments. |

**Question 8**

|  |  |
| --- | --- |
| A tech start-up with professional management and funded by institutional venture capitalists comes out with an IPO. The top line of the company has been growing by 100% every year since last 3 years but has never made any profits and burning cash every year. If the top line growth rate continues for another 3 years, then company will become disruptive and make significant profits. Lots of competitors have subsequently entered the same business. How will you analyse this company? | 1. Expect past growth rate to continue. 2. Expect growth rate to fall and question the high valuations of the IPO. 3. Avoid analysing the company completely since it is extremely risky. |

**Objective:** Check for Mere Exposure Effect/ Familiarity Bias

**Question 9**

|  |  |
| --- | --- |
| You want to invest certain funds and find two companies from the same industry you are targeting to invest. The companies are similar in all aspects but in different countries with similar interest rates. One is in your home country whose sovereign credit rating is lower than the sovereign credit rating of the country in which other company is located. There is no difference in transaction costs or efforts involved in either investment. In which one will you invest? | 1. Company located in your home country. 2. Company located in other country. 3. Partially in each of the companies. |

**Question 10**

|  |  |
| --- | --- |
| You have been historically been investing only in fixed income products and never in equity. Your financial adviser informs you that there is a big credit crisis and risk on your fixed income portfolio has gone up significantly. If the country survives and recovers, then equity will perform exceptionally well and if the country defaults on its debt then all forms of investments whether fixed income or equity will perform equally badly. What will you do? | 1. Evaluate and understand equity investment and if you like the idea, then switch to equity. 2. Immediately switch from fixed income to equity or alternative asset classes like gold or property. 3. Do nothing i.e. continue with fixed income. |

**Objective:** Check for Bandwagon Effect Bias

**Question 11**

|  |  |
| --- | --- |
| All your friends and family have invested a very large part of their savings in a familiar tech start-up with an expectation of significant returns. Your wealth levels and risk profile is similar. Will you also invest? | 1. As much as your friends have invested. 2. Avoid investment completely to avoid a contagion risk amongst your social community. 3. Invest some part of your wealth. |

**Objective:** Check for Loss Aversion Bias

**Question 12**

|  |  |
| --- | --- |
| One of the companies in which you have Rs. 900 worth of unsecured fixed deposit is going bankrupt. Company gives two options to its creditors: convert your unsecured FD into equity with a 10% probability that it will survive and return back around Rs. 100 more than the return on FD or opt for liquidation where only secured creditors may get paid with no payment to unsecured fixed deposit. What will you opt? | 1. Debt to equity swap. 2. Liquidation. 3. Do nothing and let others vote for you to tag along with them. |

**Question 13**

|  |  |
| --- | --- |
| One of the companies in which you have Rs. 900 worth of unsecured fixed deposit is doing extremely well. It wants to reward its FD holders and give them an option to convert their FD to equity with a 90% probability of making Rs. 100 more than return on FD. What will you opt? | 1. Debt to equity swap. 2. Retain FD. 3. Just ignore and don’t put time into it. |

**Objective:** Check for Endowment Effect Bias

**Question 14**

|  |  |
| --- | --- |
| One of the companies in which you have equity gets an acquisition offer payable by swapping your equity with the equity of the acquirer. The post-acquisition value of your equity is expected to be the same as pre-acquisition. Will you accept the offer? | 1. No. 2. Yes. 3. Just ignore and tag along with majority vote. |

**Question 15**

|  |  |
| --- | --- |
| You have been using Google Drive with 15GB data size to back up your data. You like the user friendly service and the excellent interface. You don’t need additional data storage. Another competitor comes with an offer of free 30GB data storage and you hear from your friend that it is equivalent in quality. Would you switch? | 1. No. 2. Yes. 3. Maybe, not sure. |

**Objective:** Check for Sunk Cost Bias

**Question 16**

|  |  |
| --- | --- |
| You order expensive food at a speciality dine in to entertain a client. Unexpectedly the portions are very large and you and your client find it difficult to finish it. But the food is extremely expensive. Do you finish the food by over-eating? | 1. No. 2. Yes. 3. I will ask the restaurant to pack-it up as parcel for takeaway to eat later. |

**Question 17**

|  |  |
| --- | --- |
| You have an unsecured fixed deposit with a company which is into financial difficulty. The company requests all deposit holders to deposit further amounts to repay secured debt holders else the company may default on its financial indebtedness. Do you contribute? | 1. No. 2. Yes. 3. Maybe, not sure. |

### Survey Results

The self-assessment by the participants with the big five behavioural trait is tabulated below:

|  |  |  |
| --- | --- | --- |
| **Sr. No.** | **Personality Trait opted/ self-assessed** | **No. of participants** |
| 1 | Openness to Experience | 21 |
| 2 | Conscientiousness | 19 |
| 3 | Extroversion | 24 |
| 4 | Agreeableness | 35 |
| 5 | Neuroticism | 1 |

Since the sample size of participants opting for Neuroticism was too small, it was excluded from survey results.

The survey results were scored across different personality traits and the extent of bias was grouped and classified as either high level of bias, medium level of bias or low level of bias and tabulated as follows:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Bias**  **Trait** | **Openness to Experience** | **Conscientious-ness** | **Extroversion** | **Agreeable-ness** |
| **Confirmation** | Medium | Medium | High | Low |
| **Halo Effect** | Medium | Medium | High | High |
| **Anchoring** | High | High | Medium | Medium |
| **Mere Exposure** | Medium | Medium | Medium | High |
| **Bandwagon** | High | Medium | High | High |
| **Loss Aversion** | Low | High | Medium | Low |
| **Endowment** | High | Low | Low | Low |
| **Sunk Cost** | Medium | Medium | High | Low |

Flipping the table above, the matrix of traits-biases is as follows:

|  |  |
| --- | --- |
| **Bias**  **Trait** | **Highest susceptibility** |
| **Openness to Experience** | Anchoring, Bandwagon and Endowment Effect Bias |
| **Conscientiousness** | Anchoring and Loss Aversion |
| **Extroversion** | Confirmation, Halo Effect and Bandwagon Bias |
| **Agreeableness** | Halo Effect, Mere Exposure Effect, Bandwagon Bias |

The result shows that Bandwagon Effect, Halo Effect, Loss Aversion and Mere Exposure Effect biases have the most positive and significance influence toward investment decision. Among the four variables, Bandwagon Effect bias is the factor that has the greatest influence to the decision to invest. Individuals are more susceptible to certain bias on account of their personality traits.

# Chapter 10:

# Marketing/ Business Strategies

Bespoke marketing and generally, business strategies based on SHAMBLES i.e. identification of personality traits and mapping of the cognitive and emotional biases, that the targets are susceptible to, has immense potential to achieve the marketing objectives from cross selling. Some generic examples of marketing strategies are given below:

**Support/ Confirmation Bias**

“Buy on Rumours” is an adage that serves well to confirmation bias. How well can you re-inforce the pre-conceived notion an individual has, works wonders for marketing to individuals with confirmation bias. The marketing strategies could be as follows:

1. **Reinforce your brand image**

The entire notion of confirmation bias is that people already have ideas in their head – and they’re difficult to change. If one has a strong brand image that people can associate with, then one may simply confirm the brand image while communicating. In the case of Apple, consumers associate it with the highest premium tech gear. By maintaining this idea that “Anything you can do, you can do better” with Apple products is an incredibly simple, yet powerful use of confirmation bias.

1. **Use stereotypes and clichés to your advantage**

People generally believe German cars are reliable, Japanese cameras are the finest and Columbian coffee is the stuff of kings. These preconceived ideas can be used to your advantage on account of cognitive bias. When a German car manufacturer tells people their cars are reliable, few of them will question it. And people looking for the most reliable car on the market will be drawn to German automobiles regardless of how many reliable manufacturers there are out there. Very few would know, for example, ‘BMW’ cars have one of the highest maintenance costs.

1. **Show customers their money is safe**

When consumers pay for something, they want to know their money is in good hands. So they’re looking out for reinforcements that tell them they can trust you as a brand. This is why customer reviews, testimonials, money-back guarantees and lists of your best clients can have such a drastic impact on conversions. For example, re-inforce the brand image “Banking on Trust” of Axis Bank Group of companies. With confirmation bias at work, consumers think “if it works for them, then it’ll work for me” and they’re less protective over their money.

1. **Become your target audience**

Most people identify strongly with some brands more than others. It’s because they associate a part of themselves or the person they aspire to be with said brand. If you’ve ever felt yourself saying “This is the company for me!”, there’s every chance your own cognitive bias has been triggered. Images are incredibly powerful here, literally showing users the kind of person they’ll be with your brand. Notice the different approaches of Ultra-Light Outdoor Gear and Cotswold – two of the UK’s leading outdoor clothing and equipment retailers. ULOG goes for images that show people making porridge in the wilderness, sleeping outside and mountain climbers in mid-swing. These are real adventure seekers (or people who see themselves/aspire to be) that the brand is targeting. Meanwhile, Cotswold goes for images that look more like a rugged fashion brand. There is far more emphasis on look and style than pitched tents and outdoor stoves, even though it sells many of the same product categories as ULOG. By mirroring your target audience and the person they consider themselves or aspire to be, you’ll confirm that you’re the brand for them.

1. **Know your audience’s pain points**

When people have a problem they want to believe there’s a solution out there for them. This is where the concept of pain points comes from in marketing. Know what bugs your target audience the most and position you as the solution. This works in two stages. First confirmation bias tells users that, yes, they do in fact have the problem you’re talking about. And, more importantly, it confirms the news they’re hoping for: that there is a solution and you can provide it.

1. **Retain your existing customers**

One of the most important uses of confirmation bias is retaining customers and turning them into repeat buyers or cross sell other products. When someone buys a product, the first thing they want to do is rationalise their purchase. They want to justify their buying choice and this is especially true for the more expensive or significant purchases. The aim should be to eradicate the risk of buyer remorse which could result in cancelled orders or unhappy customers. Confirmation bias makes it pretty easy to convince your customers that they made the right choice. Product/service quality is the first thing you need to establish, which includes a solid customer service system to help ease any issues they might have. You can sweeten the deal further with freebies, add-ons, vouchers and other rewards for their initial purchase. Help them get the best out of your product/service with free guides and tools – eg: free Photoshop plugins for creatives. Once your customers are fully happy with their initial buying choice, it’s time to turn them into repeat buyers and brand advocates. Call them loyal customers, set milestones and rewards for using your product or service. For example, clients earn points based on volume of products purchased/ subscribed or sold/ redeemed or securities traded which can be redeemed for gifts.

1. **Avoid the confirmation bias trap yourself**

A challenge marketer’s face is keeping themselves free of confirmation bias. This is particularly true with conversion optimisation where marketers make changes and run tests with preconceived ideas. Data can quickly start telling us what we want it to tell us and minor test results are easily exaggerated. The danger is we could end up choosing a test result that isn’t as positive as we like to think or potentially ignore a variation that actually increases conversions. Remember, we’re all geared towards confirmation bias influencing our choices. Learn how to use it to your advantage with your marketing messages, but also how to stop yourself from getting trapped into it as well. Investment banking has an old adage “Never believe your own bull shit”.

**The halo effect bias**

“First impression is the last impression” adage is most suitable to halo effect bias. A great company with a shoddy website will struggle to sell more online than a shoddy company with a great website. This is also why it’s so important to nail the first marketing message users see when they discover your brand for the first time. Because this has a huge influence on how they’ll see your brand in every interaction that follows – and don’t be afraid to target specific niches. The halo effect is a cognitive bias where our mind takes one point (or a select few) and bases an opinion about an entire person, brand or organisation. From a marketing perspective, this can be a very good or bad thing, depending on the opinion people form about your brand.

1. **Web/ App page design & loading times**

First impressions count for a lot and the first two things people notice about your website are design and loading times – even if they don’t realise it. In fact, if your design and loading times are good enough, they shouldn’t consciously notice them. Ask yourself what kind of impression you want users to have when they land on your site. Are you supposed to be a professional brand, a luxury retailer or something a little more tongue in cheek? Your design needs to reflect your brand image and the expectations your target audience have of you. Also aim for pages that load within two seconds or you could be making a bad, lasting impression.

1. **Audience research**

Let us look at online travel brands because the best of them absolutely nail audience research. The best travel brands know they’re not selling a service, they’re selling an experience. And they also know they need to match the kind of experience their target audience is looking for. People expect very different things from a luxury travel brand and one providing adventure activities.

1. **Play to your brand strengths**

In 2014, Marks & Spencer brought together its food and general merchandise ranges into a unified marketing campaign. The goal was to create a halo effect for the brand’s entire range of products that customers associate with the highest standard of quality. The British retailer makes no apologies for being pricier than the average high street store. Instead, it focuses on its core brand strength: quality. And, by unifying the two sides of its product lines, it created a single halo effect for the entire brand. Not only did this help M&S create a more consistent message for both sides of the business, it increased the number of customers already invested in one side buying into the other. The halo effect can be a powerful way to justify something undesirable (high prices) with something more important (premium quality) to your target audience.

1. **Lead with your star product**

Another premium brand that nailed the halo effect is Apple. Not only do we associate its high price tags with established products, we’re happy to pay a premium for their new devices as well. Most importantly, their recent progress started with the iPod – a tiny device that cost a fraction of the price iMacs and MacBooks were going for. Yet Apple marketed the iPod as its leading product, despite the comparatively low margin on each sale. With the iPod, Apple created a new halo effect that would drive its popularity and innovation into the iPhone manufacturer we know today. Not to mention it increased annual profits by 384 percent in 2005. For example, the best performing IPO marketed by an investment bank can create halo effect to cross sell other products.

1. **Social proof**

Active campaign shows customer stories to highlight the best of its services. One of the most common halo effect strategies you’ll see on websites is social proof. By including testimonials, users get the impression your services are always to the highest standard. By showing brand logos of your biggest clients, users assume this is the calibre of business you are on a daily basis. And customer reviews set the bar of expectations for prospective leads. For example, if a business publishes on its website the returns fetched by the best performing client (with their consent) for one of the products, it can help to cross sell other products.

1. **User experience**

One of the most important factors in creating a halo effect for any online brand is user experience. Beyond the first impression we talked about in point #1, it’s the user experience you create that builds a lasting impression of your brand. But you need to move beyond the notion of simply designing a good experience and designing the right kind experience.

Booking.com could certainly simplify its user experience, but convenience isn’t the selling point it’s going for. People go to Booking.com for cheap rates on hotel rooms and they’re happy to take extra steps in the process. In fact, these extra steps contribute to the satisfaction element of securing rooms at a discount rate.

Meanwhile, Airbnb has nothing to do with discount rates, instead focusing on the experience of staying with locals. Which is reflected in the community experience it creates, complete with hosts’ user profiles and messaging system.

1. **Build the strongest online presence**

People assume brands sitting at the top of Google are bigger and better than the rest. Building a strong online presence not only makes you more visible, it makes you perceptively more trustworthy and authoritative. So be strategic about your approach to search engine optimisation and paid advertising. Aim for the top spots wherever possible and supplement your lower rankings with AdWords ads. You can boost your efforts further by using seller ratings in AdWords to show customer reviews on your ads. To do this you’ll want to collect as many positive reviews on Google and third-party sites like BBB, Trustpilot – all of which spreads your online presence further. The same thing goes for Facebook and your other networks. Show reviews and rating where you can and are responsive. Show people you’re quick to engage and the halo effect will suggest you’re equally as responsive when it comes to customer services and other important areas. For example, Chatbots with human interface to answer queries work very well for any online broker-dealer.

When Web/ App designers talk about the importance of loading times and professional design, it’s not a sales pitch. Psychological principles like the halo effect have been used by marketers for decades to make the right kind of impression on consumers. Or, perhaps more importantly, avoid making the wrong kind of impression – because they tend to last longer.

**Anchoring bias**

The first price people see for a product will set the bar of expectation and you can use this to affect the way people respond to product pricing. Showing a low or zero brokerage rate (USP) by a retail broker will have people automatically think they’re getting a bargain for all products. Or show off the products which gave maximum returns to your clients first and the expectation of returns from your other products will instantly build up more than they would have by their own merit. So let’s look at how marketers can use anchoring bias to influence buyer decisions.

1. **Original price vs discount**

Next time you see promotion sales, pay attention to how online grocery retailers present their savings. In many cases, they’ll simply put the new discounted price and tell people they’re getting a bargain – but this doesn’t really illustrate the saving. If you put the original price first, though, this acts as an anchor representing the true value of the item. Any discount price that follows, instantly gains weight because you’ve already anchored that initial price into people’s minds.

1. **Monthly vs Annual plans**

This is a classic tactic used by software firms that exploits anchoring bias. Obviously, it’s far better for online software provider to get an annual payment from users upfront than each month. But when it displays the annual price after the monthly price, it seems like people are saving money by signing up for a year even though they’re paying more and tying themselves into a year-long contract.

1. **Manipulating price perception**

Ever wondered why car dealerships put their most expensive models at the front of the display room when they’re typically the slowest selling models? When you walk past the expensive ones those behind doesn’t seem so expensive. The same thing applies to every kind of luxury purchase. If you need proof this actually works, look no further than the hilarious $69 hotdog marketing ploy by Serendipity 3. The pricey food chain made headlines and even landed itself in the Guinness Book of World Records for the most expensive wiener in history – all of which resulted in masses of exposure for the New York eatery. That wasn’t the victory though. Sales of the ludicrous $69 hotdog weren’t particularly impressive, despite all the press. But the sales of their $17.95 cheeseburgers – a price no-one in their right mind would normally pay – soared. People were drawn to the place because of the hype and opened their wallets because an almost $20 burger seems reasonable at a place that charged $69 for a hotdog. They also sell a $1,000 sundae. Recently, the restaurant launched the most expensive ice-cream in the world, Frozen Chocolate Haute dessert, priced at $25,000.

1. **Multiple unit pricing**

Supermarkets have been milking this one for decades and people still queue up to hand over their cash for this classic trick. Multiple unit pricings is when you simply add a discount for buying in bulk – for example, three packs of beer for £21 instead of £9.00 each. Again, the idea is to make people think they’re saving money when they’re actually buying something they don’t even need. Even if you only plan to buy one crate of beer, it’s hard not to buy three when it seems like you’re almost getting one for free. It’s hard to resist buying beer at all when you know it’ll keep and you’ve already “saved” your money.

1. **Price increases**

Consumer tech brands do a great job of increasing the price of their products over the years – far more than inflation and their technology innovations often justify. Apple has been the champion of this, releasing a more expensive breed of devices with HD displays over the last half-decade. Anchoring bias is at play when each progressive price hike seems less significant because the previous is a new anchor. And then you have new model of iPhone making the previous iPhone model seem less unreasonable – for a phone that may be pretty much the same.

1. **Lead with your core selling point**

Anchoring bias isn’t only something you can use to influence the perception of price. By leading with your core selling point, you also define how people interpret the information you then tell them about your product. If you convince them your product is innovative in your core selling point, everything on your terms will appear innovative – even if it’s not industry leading.

1. **Gear Acquisition Syndrome**

Gear Acquisition Syndrome (GAS) is the constant desire to add new equipment to your collection. It tells photographers that their camera is no longer good enough, musicians that their 400kw amp is no longer loud enough and drivers isn’t impressive enough anymore. Essentially, it’s the irrepressible habit of buying new things we don’t need. Similarly, a new pricing scheme for online trades on a new ‘professional screen’ with multiple new features, company research reports or technical graphs etc helps increase in revenues.

**Mere Exposure Effect/ Familiarity Bias**

Investors stick to well-known investments even though they see the seemingly obvious gains that diversification offers. For example, retail investors in stocks like HDFC led them to invest in other sister companies such as HDFC Bank, HDFC Standard Life etc. Many retail portfolios will have lopsided exposures to well establish large cap group of companies rather than start-ups, small caps or mid-cap companies. The mere exposure effect explains why people are more likely to buy from brands they know well. This is why it’s much easier for Nike and Adidas to sell running shoes than a new manufacturer, regardless of product quality. And this is why brands like Nike and Adidas pay big money to sponsor sporting events and manufacture kits for the most popular teams.

The mere exposure effect helps explain why building brand awareness is such an important marketing strategy. You have to be strategic with your efforts, though, because nobody wants to see the same brand name everywhere they turn. So let your brand take the back seat sometimes and allow your marketing message to shine through. Adapt your messages for consumers as they work their way along the buying process and make the most of today’s automation and targeting technologies to reach them with the right message, at the right time. So here are seven ways marketers can use this principle effectively to boost conversion rates.

1. **Capture leads early**

To make the most of the mere exposure effect you need to capture leads early. If you introduce your product or entity offering the product at the last stage of the buying process then you’re at a disadvantage over your competitors who have been building familiarity with users with a same or similar product. First mover advantage always helps in financial industry.

1. **Make the most of social media targeting**

Social media channels like Facebook, Amazon etc. are great platforms for making the most of mere exposure. The network is better suited to building brand awareness than directly converting leads and its targeting options mean you can pinpoint audiences that are most likely to do business with your brand later on. One tactic that works really well with Facebook is to target people based on life events. For example, you know that newly engaged couples will be thinking about honeymoons. Likewise, pregnant women will soon be in the market for prams and a wide range of baby products. And people who are looking at buying a new car will need to review their insurance policy in the near future. Targeting these people with ads for your own products before they even realise they need them gets the mere exposure effect in motion at the earliest moment.

1. **Make the most of AdWords Display Ads**

While you can use regular search ads to leverage the mere exposure effect, it tends to be an expensive approach. If you’ve got the budget for it, don’t let that stop you. Dominating page one with AdWords text ads and a top spot in the organic listings for popular searches is a great way to trigger the exposure effect. You can also bid on your competitors’ brand names to sneak your brand into the mix and get things started. If those approaches are too much for your AdWords budget, then try this one on for size. Using the Display Network you can target users with visual ads based on the websites they visit. So people searching for a new phone can be targeted with gadget insurance ads, for example. Business owners looking for WordPress themes can be targeted with ads for specialist hosting.

1. **Use AdWords remarketing to nurture leads**

Once you get users on your site, AdWords remarketing allows you to target users with ads on the Display Network after they leave. So leads that don’t convert right away will see your ads as they continue to browse the web and the mere exposure effect works its magic. The key with AdWords remarketing is not taking things too far – and this is important with the mere exposure effect in general. You don’t want to show people the same too frequently or for too long a period, otherwise you’ll end up frustrating them. Be strategic with your ad choices, use ad variations and set a time limit on your remarketing campaigns.

1. **Marketing automation**

Salesforce‘s marketing automation makes it easier to target consumers at every stage of the buying journey. As marketing automation technology matures, it’s getting easier to target users over an extended period of time while changing your message to meet their developing needs. As I said in the previous point, targeting users with the same ad for too long causes more harm than good. It also dilutes the impact of your message which doesn’t adapt as their demands change. For example, a consumer in the comparing-products stage of the buying journey will respond differently to someone looking for reviews of a specific product. Marketing automation means we’re now able to target these same users as they progress through the different stages of the buying journey and adapt our ads to meet their changing needs. The mere exposure effect kicks in when your brand is repeatedly in view, but in a way that doesn’t frustrate users because you’re constantly addressing their needs.

1. **Blend in**

Marketers tend to obsess over differentiating brands as a means of standing out from the competition. This is a fundamental marketing principle that’s hard to argue against but there are times where you might actually want to blend in. For example, a life sciences company doesn’t want a website design that makes them look like an online casino. Likewise, a technology start up doesn’t want to follow the typical design convention of a non-profit organisation. This is because brands want to feel familiar to new and regular users despite needing to communicate some kind of unique selling point (USP). For example, blend online trading platform with similar features with the leader in the industry and offer at reduced pricing.

1. **Attack your rivals**

You can also use the mere exposure effect against your competitors by targeting their USP and turning it against them. Or, better yet, turn their biggest weaknesses against them. Samsung has a great history of doing this against Apple.

**The Bandwagon Effect**

The bandwagon effect helps explain why people queue up for days to buy an iPhone they don’t need. Or why people sign up for pension plans when they could just as easily (and more securely) save that money for themselves. It also explains why the price of Bitcoin has soared and crashed. It’s all because of the bandwagon effect and this is the same reason brands spend huge amounts of money on celebrity faces to advertise their products. When a consumer product becomes as fashionable as the iPhone, people buy it purely for the logo. When finance companies tell you every sensible person is paying into their futures, people sign on the dotted line. And when a few people get rich with a new investment opportunity, everyone wants a piece of the action. Here are seven ways to use the bandwagon effect to boost your conversion rates.

1. **Show people using your product/service**

The easiest way to trigger the bandwagon effect in potential customers is to literally show them people using your products. From the images on your website to the promotion videos you share on social media, show people enjoying the best of what your brand has to offer. You could simply use regular models in your content but the big brands can’t resist a good celebrity in their marketing campaigns. While a more modern approach in the digital age is influencer marketing, this may or may not involve celebrities. “Simplehai” is a great tag line for AxisDirect to shift clients from inefficient phone orders to cost effective online trading. One can further get the product used by an online influencer with a crowd of followers (but a rookie trader) and bask in the mass exposure, knowing your followers will jump on the bandwagon to be like your influencer.

1. **Create your own gold rush**

This one works particularly well for B2B and service-orientated brands. Position yourself as an opportunity for people to get their slice of a newly lucrative pie. The perfect example right now is cryptocurrency: literally a digital gold rush at present. Now we have investors and cryptocurrency “experts” promising to let us all get in on the action. An article from Return of Kings apparently revealing how to make money trading cryptocurrency. Not all gold rushes fit the metaphor so blatantly, though.

1. **Jump on the bandwagon yourself**

We see this one from tech brands all the time. Dual cameras on phones perform worse than single cameras, yet people demand the feature now a massive pixel size of the camera is irrelevant except for a select few. Yet every new phone by every brand competes with such useless features. Sometimes the best way to get people on the bandwagon is for you to jump on it first.

1. **Use fear to usher people onto the bandwagon**

This is a classic tactic used by insurance companies, moneylenders and all kinds of financial firms. Chances are you’ll never be burgled, your house won’t burn down, you’ll get through every holiday without injury and you’ll never be sued. Yet fear makes us pay up for all kinds of insurance policies, children education plans and retirement plans we’ll probably never need. Few things burn a hole in our wallets like those terrifying what if questions. Even the fear of being a burden on our loved ones has us paying up for funeral plans when we could just as easily put our own money aside to pay for the costs after death.

1. **Use calendar events to your advantage**

Black Friday: An event where retailers manage to convince consumers they’re getting a good deal by offering them old stock they can’t sell at discount prices. The same thing goes for that itch to buy new clothes when the fashion seasons switch. Or why people spent more than they’ve got in the build up to Diwali, Christmas or Eid. It’s the same reason we all by roses and chocolates on Valentine’s Day instead of actually putting some thought into something original for our loved ones.

1. **Showcase your happy customers**

This is probably the most obvious (and common) bandwagon effect technique in marketing today. This is where your customer reviews, testimonials, case studies, social shares and every other example of a happy customer will help you boost those conversion rates. That’s probably bandwagon effect tells users that what made your previous customers happy should make them equally as chuffed with your brand.

1. **Position yourself as an anti-bandwagon brand**

Airbnb: Book “unique” travel experiences by doing the same things as everyone else. Not only does it bring out the sheep in consumers, it combines some classic reverse psychology to capture people who hate the idea of jumping on any kind of bandwagon. In the days of social media turning us into narcissistic maniacs, we like to think we’re unique. There may be the bandwagon haters who queue up more eagerly than anyone and jump on a bandwagon – as long as it’s made out of recycled material.

**Loss Aversion**

The classic loss aversion tactic used by marketers is to give credit cards with airport lounge access. Once you give people vouchers for lounge access or a free Priority Card, they feel like they own that perceived saving. And, if you threaten to take that away, people automatically feel as if they’re losing something that’s rightfully theirs – even though there’s nothing to own.

The same thing happens when a free trial comes to an end. Users feel like they’re about to lose out on something they’ve spent the last month using, which makes it harder to give up. Thanks to loss aversion, you’re far more likely to turn free trials into paid subscriptions than converting users who’ve never used your software before. Here are seven ways you can use loss aversion to boost your own conversion rates.

1. **Free trials and samples**

Offering a free trial or samples of your product may seem like a trivial matter but there’s a lot of psychology going on here. First of all, research shows us that we assign a higher value to items that we own than items we don’t. Once users are signed up to your free trial, they feel like an owner and they start attributing value to it. More importantly, once users get used to the full version of your product and its premium features, it’s difficult to let them go. Loss aversion literally leaves them itching to sign up to the full paid version of your platform rather than lose out on the features they’ve already enjoyed for the last 30 days.

1. **Coupons**

Coupons are a classic loss aversion tactic that still works in the digital age. Coupons trigger loss aversion far more aggressively than a regular sales promotion. Because a coupon is something consumers easily gain; it’s something they can comprehend owning – and it’s something they can image losing. Once you put a time limit on that thing, it’s not a saving they’ve gained. It’s a saving they’re about to lose unless they act quickly.

1. **Scarcity and urgency**

Scarcity prompts users to take action rather than risk missing out altogether. Essentially, scarcity and urgency tactics play on the fear of losing the opportunity to buy. When there are thousands of products left in stock, we know we can buy when we want. When an item is sold out, we kick ourselves for not taking action sooner. In syndication of securities, it is important to preserve the scarcity value. If crowded marketing takes place by multiple investment bankers syndicating the same security, the potential investors perceive desperation and doubt the issuance or believe they can bargain for a better price. Keeping issuance open for a short period of time pushes desperation to investors to act fast or lose out on chance to invest in the product.

**Endowment Effect**

People are often willing to pay more to keep something they already own while new customers will be less inclined to pay the same asking price. Likewise, it’s difficult for people to let go of things they already own because the sense of value becomes inflated. This is the endowment effect in action. The following marketing strategies can help conversion rates:

1. **The giveaway**

This is one of the most common examples you’ll see of marketers using the endowment effect. The idea is to give users something they can own right away; something that requires them to convert in order to use. Whether you give users a free coupon, a product or some free balance to start using your services, you’re creating a sense of ownership right from the start. Once the endowment effect kicks in, people will start assigning additional value to your giveaway – more than the actual value it deserves. And the best part is you’re not giving them anything they can use without converting. It’s a simple and widely used strategy, but an effective one. Stick a time limit on those coupons on availability of your freebies. This will trigger loss aversion and create sense of urgency.

1. **Free trials**

Letting people use your products or services is a good way to kick-start the endowment effect. This is the principle behind test driving cars and the policy in Apple stores to let people play around with devices for as long as they like. The longer people spend interacting with these products, the greater the sense of ownership becomes. The same thing goes for free trials with software products and online services, too. The more time people spend using and customising them, the greater the sense of ownership becomes and the harder it is to give up.

1. **Accounts and personalisation**

As soon as a user creates an account with your product or services, they’ve got a private space of ownership with your brand. So encourage users to sign up for an account before they convert and make these spaces as personalised as possible. Avoid forcing people to sign up before they can convert, if possible – because doing so adds friction. But you can encourage them with incentives or rewards for creating an account on the spot. Once people sign up, encourage them to save custom settings and create resources like favourite’s lists, archives and plugins. Each of these personalisation’s is another element users feel they own and won’t want to give up.

1. **Freemium versions**

Free trials are one thing but offering a freemium version of your products is a great way to give people ownership and trigger the endowment effect. The key is offering the right features in the free version of your product. You want to offer enough that users experience the best of what it has to offer but hold back enough to make serious users want to upgrade their package.

1. **Add new features for premium customers**

The aim with premium features like ‘professional’ version of an online stock trading platform is to encourage people to upgrade to premium by paying a fee. This on its own can be enough to turn casual users into primary conversion goals, but you can use the endowment effect to take things further. Instead of simply introducing new features for your top-paying customers allow all users to try out the new feature for a set period of time. Let them get used to enjoying the platform with this new feature; develop that key sense of ownership and a resistance to giving it up.

1. **Brand ownership**

Amazon Prime has had great success of its pilot season marketing campaign, which gets users involved in the viewing and rating process for potential new shows. Viewers can give Amazon Studios direct feedback on its original content, which helps the company decide which shows to fully release. Not only that, but it gives Amazon Prime users a sense of belonging and ownership to the service – plus the shows they critique. Crucially, people sign up for the 30-day free trial can also get involved, giving them more reason to pay up for a full subscription.

1. **Make the most touch screens**

Back in 2013, a study looking into consumer psychology and the rise of mobile technology. It found that users who interact with products via touch screens develop a perception of ownership, setting them up for the endowment effect. The study went on to recommend stores allow people to use their mobile devices in-store to enhance the browsing experience. It suggested providing users with engaging product images they can zoom, rotate and interact with. All of which is designed to build that early sense of ownership. Just a few years later, 90 percent of shoppers were using smartphones in stores to help them make buying decisions. In-store deals, loyalty programs and product recommendations are just a few of the techniques retailers are using to create a more interactive shopping experience in stores.

**Sunk Cost Bias**

People are more likely to complete an online study programme if a progress indicator shows they’ve already made it so far. If they give up now, they’ve wasted their time for nothing and will not get a certificate. Likewise, if users have invested time in setting something up – like playlists on Spotify that can’t be transferred easily – they’re far less likely to stop using a platform. From a marketing perspective, sunk bias cost also impacts a lot of people’s buying decisions. And you can use this to boost your conversion rates. Here are seven ways you can use sunk cost bias to influence consumer behaviour:

1. **Ease buyer remorse**

We’ve all bought into things and been disappointed by the reality that comes after the sales pitch. Whether your new car doesn’t live up to the reviews you read or your social advertising strategy isn’t justifying the money you’ve invested so far. Buyer remorse is a painful thing. Sunk cost bias is hitting hard and they’ll jump at the chance to turn things around. There will always be clients of retail online brokers who have used online trading platform and hold their securities in their dematerialised accounts and find their previous platforms better. However, it will always take time and effort to move out to a new platform. Thus client retention strategy to reduce buyer remorse is an essential part of any marketing strategy. Good customer service and interaction is essential for such customers.

1. **Use progress indicators to increase conversions**

Two of the worst places to leak conversions are web forms and online checkouts like for example feedback forms or new account opening forms. At this point, users are committed to converting but something gets in the way of completing the process. This is why form and checkout optimisation are so important. One powerful tactic you can apply is a progress indicator on your multi-step forms and online checkouts and save the past steps or information already entered into the forms. Showing users they’re two-thirds through your form makes it difficult to give up after investing the time to make it this far. If they quit now, they’ve wasted their time for nothing.

1. **Use a balance payment system**

Allowing users to pay by card is a great feature but you might get better results by encouraging people to top up a balance. Once that money is there, it feels like users have already spent the cash and they’re less resistant to buy more. Instead of forcing users to buy this way consider some kind of reward for topping up. For example, a coffee shop might give users a free coffee with their first order every time they top up their balance by £20 or more. Most online trading platforms seek to fund the bank accounts first with the entire target amount of securities the client proposes to purchase and only then the trade can be executed. This leads to sunk cost bias and the client is unlikely to transfer money out to another online platform partner bank to trade through that other platform.

1. **Leverage sunk costs to boost upselling**

This is how consumer electronics brands sell insurance for phones and other pricey gear. It’s the same approach airlines take with selling priority boarding and seat reservations. Essentially buyers tell themselves “I’ve already spent this much so I may as well pay a little extra for a better experience”. This is particularly effective when the additional cost is significantly smaller than the initial expense.

1. **Set users up for sunk cost bias**

Products that require users to invest time and money make it difficult for buyers to switch brands. Think of a DSLR user with tens of thousands invested in Nikon lenses. It’s very difficult for these people to suddenly switch to Canon or Fuji. Likewise, software platforms that are highly customisable or difficult to set up are hard to give up on. One platform that does this really well is Spotify. On the face of things, Spotify doesn’t look all that customisable. You don’t get much in the way of a user profile and the experience is essentially the same for all users (aside from the free and paid versions). However, once you’ve used Spotify for six months or more you realise you’ve got a whole catalogue of custom playlists and artists you’re following. This is what you’re really giving up by jumping over to another service. Similarly, good customizable portfolio management tools, risk management tools, technical charting tools etc. sets up users of an online trading platform for sunk cost bias.

1. **Use sunk rewards to keep customers buying**

Sunk costs don’t always have to be a financial loss. If you reward buyers for doing business with you, it becomes more tempting to buy again. It becomes difficult to go elsewhere. A classic example is the coffee stamp card where customers get their tenth coffee for free. Studies show people are significantly more likely to complete a ten-stamp once two spots are stamped. More so than an eight-stamp card without any spots stamped. In both cases, customers only need eight stamps but it’s the previous investment that drives them. With two spots stamped, people feel compelled to complete the card and get their reward. They’ll order coffee when they’d rather have tea and won’t waste their time buying coffee from anywhere else.

1. **Recommend a friend**

You can also use rewards to get entirely new customers with a recommend-a-friend policy. Your existing customers are already invested and have nothing to lose by getting some of their friends on board. In fact, they could have a lot to gain if they’ve got a long list of friends.

# Chapter 11:

# Conclusion

To be a successful investor over the long term, it is critical to understand, and hopefully overcome, cognitive or psychological biases that often lead to poor decisions and investment mistakes. Cognitive biases are ‘hard wired’ and we are all liable to take shortcuts, oversimplify complex decisions and be overconfident in our decision-making process. Understanding our cognitive biases can lead to better decision making, which is fundamental, in our view, to lowering risk and improving investment returns over time.

A marketing professional of an investment banking firm should attempt and help its client to overcome a bias, while not exploiting a bias to push his/ her product. However, it is usually difficult for marketing professionals (unless they had long term client relationship) to manage overcoming client’s bias. Most often marketing professionals pre-warn a client about their bias but do not overtly go out of their way to overcome a bias else it may lead to client attrition.

Thus, personality traits and cognitive biases should be an ideal focus of any successful marketing strategy. It is also important that the marketing strategy is not overly reliant on bias. For example, it can be easy to get complacent with software updates because you know users have already invested themselves in your platform. This might work out for you initially but as soon as a rival comes out with a better system, you could be in trouble. Likewise, nudging clients to subscribe to your products is fine. But if you force them too much, you could earn a reputation of overtly intruding or holding your customers to ransom. As with all things in marketing, getting the best results from bias is a balancing act.

# BIBLIOGRAPHY

General background material in this book has been drawn from numerous sources of information cited/ referenced below in addition to references given earlier in the book.

Books, articles, journals, papers :

1. Amir, E., & Ganzach, Y. (1998). Overreaction and underreaction in analysts' forecasts. Journal of Economic Behavior & Organization, 37(3), 333e347.
2. Akerlof, George and Robert Shiller, 2009, Animal Spirits: How Human Psychology Drives the Economy, and Why It Matters for Global Capitalism, Princeton: Princeton University Press.
3. Ariely, D., Loewenstein, G., & Prelec, D. (2006). Tom Sawyer and the construction of value. Journal of Economic Behavior & Organization, 60(1), 1e10.
4. Arkes, H. R., & Blumer, C. (1985), The psychology of sunk costs. Organizational Behavior and Human Decision Processes, 35, 124-140.
5. Baker, M., Pan, X., & Wurgler, J. (2009). A reference point theory of mergers and acquisitions. National Bureau of Economic Research.
6. Barber, B. M., & Odean, T. (2002). Online investors: Do the slow die first? Review of Financial Studies, 15(2), 455e488.
7. Barber, B. M., Odean, T., & Zhu, N. (2009). Systematic noise. Journal of Financial Markets, 12(4), 547e569.
8. Bechara, A., Damasio, A. R., Damasio, H., and Anderson, S. W. (1994). Insensitivity to future consequences following damage to human prefrontal cortex. Cognition 50, 7–15.
9. Belsky, Gary and T. Gilovich, 1999, Why Smart People Make Big Money Mistakes, New York: Simon and Schuster.
10. Bernard, V. L., & Thomas, J. K. (1989). Post-earnings-announcement drift: Delayed price response or risk premium? Journal of Accounting Research, 1e36.
11. Bernstein William, 2010, The Four Pillars of Investing: Lessons for Building a Winning Portfolio, New York: McGraw-Hill.
12. Bernstein, William J., 2001, The Intelligent Asset Allocator, New York: McGraw-Hill. Buffett, Warren, 2015, Berkshire Hathaway: Letters to Shareholders.
13. Bertrand, M., & Schoar, A. (2003). Managing with style: The effect of managers on firm policies. Quarterly Journal of Economics, 118(4).
14. Block, R. A., & Harper, D. R. (1991). Overconfidence in estimation: Testing the anchoring-and-adjustment hypothesis. Organizational Behavior and Human Decision Processes, 49(2), 188e207.
15. Brewer, N. T., Chapman, G. B., Schwartz, J. A., & Bergus, G. R. (2007). The influence of irrelevant anchors on the judgments and choices of doctors and patients. Medical Decision Making, 27(2), 203e211.
16. Campbell, S. D., & Sharpe, S. A. (2009). Anchoring bias in consensus forecasts and its effect on market prices. Journal of Financial and Quantitative Analysis, 44(02), 369e390.
17. Carmines, E. G., & D'amico, N. J. (2015). Heuristic decision making. Emerging trends in the social and behavioral sciences: An interdisciplinary, searchable, and linkable resource.
18. Cattell, R. B. (1943). The description of personality: basic traits resolved into clusters. The Journal of Abnormal and Social Psychology, 38(4), 476–506.
19. Cen, L., Hilary, G., & Wei, K.-C. (2013). The role of anchoring bias in the equity market: Evidence from analysts' earnings forecasts and stock returns. Journal of Financial and Quantitative Analysis, 48(01),
20. Cen, L., Hilary, G., Wei, K., & Zhang, J. (2010). The role of anchoring bias in the equity market. Jie, The Role of Anchoring Bias in the Equity Market (March 16, 2010).
21. Cen, Ling & Rotman, Joseph & Hilary, Gilles & Wei, K & Bae, Kee-Hong & Chan, Kalok & Chan, Louis & Chang, Eric & Chang, Xin & Dasgupta, Sudipto & Dong, Ming & Doukas, John & Gan, Jie & Greenwood, Robin & Hai, Lu & Lesmond, David & Pan, Cynthia & Wang, Kevin & Wei, Chishen & Zhang, Chu. (2013). The Role of Anchoring Bias in the Equity Market: Evidence from Analysts' Earnings Forecasts and Stock Returns. Journal of Financial and Quantitative Analysis. 48.
22. Chandra Prasanna (2016), Behavioral Finance, McGraw Hill Education. Book.
23. Chapman, G. B., & Bornstein, B. H. (1996). The more you ask for, the more you get: Anchoring in personal injury verdicts. Applied Cognitive Psychology, 10(6), 519e540.
24. Chiodo, A., Guidolin, M., Owyang, M. T., & Shimoji, M. (2003). Subjective probabilities: Psychological evidence and economic applications. Federal Reserve Bank of St. Louis Working Paper Series (2003-009).
25. Cialdini, Robert, 2006, Influence: The Power of Persuasion, New York: Harper Business. Damasio, Antonio R., 1994, Descartes’ Error: Emotion, Reason, and the Human Brain, New York: Putnam.
26. Cover page image sources: www.geneticliteracyproject.org and www.npr.org.
27. Cox, C., & Mouw, J. T. (1992). Disruption of the representativeness heuristic: Can we be perturbed into using correct probabilistic reasoning? Educational Studies in Mathematics, 23(2), 163e178.
28. Czaczkes, B., & Ganzach, Y. (1996). The natural selection of prediction heuristics: Anchoring and adjustment versus representativeness. Journal of Behavioral Decision Making, 9(2), 125e139.
29. Daniel Kahneman, Jack L. Knetsch, Richard H. Thaler. The Journal of Economic Perspectives, 5(1), pp. 193-206, Winter 1991.
30. Davidson, Richard with Sharon Begley, 2012, The Emotional Life of Your Brain, U.K: Holder & Stoughton.
31. DeBondt, W. F. M. and Thaler, R. H. (1995). Financial Decision-Making in Markets and Firms: A Behavioral Perspective. Handbooks in Operations Research and Management Science, 9 (13), 385-410.
32. Dittrich, Dennis & Güth, Werner & Maciejovsky, Boris. (2005). Overconfidence in Investment Decisions: An Experimental Approach. European Journal of Finance. 11. 471-491.
33. Davis, H. L., Hoch, S. J.,&Ragsdale, E. E. (1986). An anchoring and adjustment model of spousal predictions. Journal of Consumer Research, 25e37.
34. De Bondt, W. F., & Thaler, R. (1985). Does the stock market overreact? The Journal of Finance, 40(3), 793e805.
35. De Bondt, W. F., & Thaler, R. H. (1990). Do security analysts overreact? The American Economic Review, 52e57.
36. Dean, M., Kibris, O., & Masatlioglu, Y. (2017). Limited attention and status quo bias. Journal of Economic Theory, 169, 93-127.
37. Degeorge, F., Patel, J., & Zeckhauser, R. (1999). Earnings management to exceed thresholds. The Journal of Business, 72(1), 1e33.
38. Dreman, David, 1998, Contrarian Investment Strategies: The Next Generations, New York: Simon and Schuster.
39. Ellis, Charles, 2009, Winning the Loser’s Game, New York: McGraw Hill.
40. Englich, B., Mussweiler, T., & Strack, F. (2006). Playing dice with criminal sentences: The influence of irrelevant anchors on experts' judicial decision making. Personality and Social Psychology Bulletin, 32(2), 188e200.
41. Ericson, K. M. M., & Fuster, A. (2014). The endowment effect. Annual Review of Economics, 6(1), 555-579.
42. Fisher Kenneth, 2013, The Little Book of Market Myths: How to Profit by Avoiding Investment Mistakes Everyone Else Makes, Hoboken, NJ: John Wiley & Sons.
43. F.fama, E. (1970). "Efficient Capital Markets: A Review of Theory and Empirical Work." Journal of Finance 2, 383-417.
44. Folkes, V. S. (1988). Recent attribution research in consumer behavior: A review and new directions. Journal of Consumer Research, 548e565.
45. Fox, Juslin, 2009, The Myth of the Rational Market, New York: Harper Books. Frank, R.H., 1988, Passions within Reason, New York: Norton.
46. Frijda, N.H., 1986, The Emotions, Cambridge: Cambridge University Press. Goleman, D., 1995, Emotional Intelligence, New York: Bantam Books.
47. Ganzach, Y., & Krantz, D. H. (1990). The psychology of moderate prediction: I. Experience with multiple determination. Organizational Behavior and Human Decision Processes, 47(2), 177e204.
48. Ganzach, Y., & Krantz, D. H. (1991). The psychology of moderate prediction: II. Leniency and uncertainty. Organizational Behavior and Human Decision Processes, 48(2), 169e192.
49. George, T. J., & Hwang, C.-Y. (2004). The 52-week high and momentum investing. The Journal of Finance, 59(5), 2145e2176.
50. Gigerenzer, G., & Gaissmaier, W. (2011). Heuristic decision making. Annual Review of Psychology, 62, 451e482.
51. Ginsburgh, V. A., & Van Ours, J. C. (2003). Expert opinion and compensation: Evidence from a musical competition. American Economic Review, 289e296.
52. Goetzmann, W. N., & Kumar, A. (2008). Equity portfolio diversification. Review of Finance, 12(3), 433e463.
53. Goldstein, D. G., & Gigerenzer, G. (2002). Models of ecological rationality: the recognition heuristic. Psychological Review, 109(1), 75-90.
54. Graham, Benjamin, 1985, The Intelligent Investor, New York: Harper and Row.
55. Habib Hussain Khan, Iram Naz, Fiza Qureshi, Abdul Ghafoor article on heuristics and stock buying decision: Evidence from Malaysian and Pakistani stock markets.
56. Heath, Chip, and Amos Tversky, 1991, "Preference and Belief: Ambiguity and Competence in Choice under Uncertainty," Journal of Risk and Uncertainty, 4, 5-28,
57. Helweg-Larsen, M., & Shepperd, J. A. (2001). Do moderators of the optimistic bias affect personal or target risk estimates? A review of the literature. Personality and Social Psychology Review, 5(1), 74-95.
58. Hofstee, W. K. B., de Raad, B., & Goldberg, L. R. Integration of the big five and circumflex approaches to trait structure. Journal of Personality and Social Psychology, 1992. – 63. – pp. 146-163.
59. Hogarth, R. M. (1981). Beyond discrete biases: Functional and dysfunctional aspects of judgmental heuristics. Psychological Bulletin, 90(2), 197.
60. Huberman, Gur, 2001, "Familiarity Breeds Investment," Review of Financial Studies, 14, 659-680.
61. Jacobs, J. E., & Potenza, M. (1991). The use of judgement heuristics to make social and object decisions: A developmental perspective. Child Development, 62(1), 166e178.
62. Jagati, Aditya, behavioural economist and South Asia manager at ideas42, Shilpi Johri, certified financial planner and founder of Arthashastra Consulting, Amol Joshi, founder, PlanRupee Investment Services and Rajiv Guha, partner, K&R Planners LLP. Newspaper quotations.
63. Janis, I.L., 1982, Groupthink: Psychological Studies of Policy Decisions and Fiascoes, 2nd ed., Boston: Houghton Mifflin.
64. John, O. P., & Srivastava, S. (1999). The Big Five Trait taxonomy: History, measurement, and theoretical perspectives. In L. A. Pervin & O. P. John (Eds.), Handbook of personality: Theory and research (p. 102–138). Guilford Press.
65. Johnson, J. E. V., Schnytzer, A., & Liu, S. (2009). To what extent do investors in a financial market anchor their judgments excessively? Evidence from the Hong Kong horserace betting market. Journal of Behavioral Decision Making, 22(4), 410e434.
66. Johnson, W. B. (1983). “Representativeness” in judgmental predictions of corporate bankruptcy. Accounting Review, 78e97.
67. Judge, T. A., Erez, A., Bono, J. E., & Thoresen, C. J. (2002). Are measures of self-esteem, neuroticism, locus of control, and generalized self-efficacy indicators of a common core construct? Journal of Personality and Social Psychology, 83(3), 693–710.
68. Justin Kruger and David Dunning, Cornell University, Unskilled and Unaware of It: How Difficulties in Recognizing One's Own Incompetence Lead to Inflated Self-Assessments. Journal of Personality and Social Psychology 1999, Vol. 77, No. 6. ] 121-1134.
69. Kahneman, D. (2003). Maps of bounded rationality: Psychology for behavioral economics. The American Economic Review, 93, 1449-1475.
70. Kahneman, D., & Tversky, A. (1982). The psychology of preference. Scientific American, 246, 160-173.
71. Kahneman, D., Knetsch, J. L., & Thaler, R. H. (1990). Experimental tests of the endowment effect and the Coase theorem. Journal of Political Economy, 98(6), 1325-1348.
72. Kahneman, D., Knetsch, J. L., & Thaler, R. H. (1991). Anomalies: The endowment effect, loss aversion, and status quo bias. Journal of Economic Perspectives, 5(1), 193-206.
73. Kahneman, D., Slovic, P., & Tversky, A. (1982). Judgement under uncertainty: Heuristics and biases. Cambridge, UK: Cambridge University Press.
74. Kahneman, D. and Tversky, A. (1974). Judgment under Uncertainty: Heuristics and Biases, Science, 85 (4157), 1124-1131.
75. Kahnemann, D. and Frederick, S. (2002) Representativeness revisited: attribute substitution in intuitive judgement, in T. Gilovich, D. Griffin, and D. Kahenmann (eds), Heuristics and Biases: The Psychology of Intuitive Judgements, Cambridge University Press, Cambridge.
76. Kahneman, Daniel, 2011, Thinking, Fast and Slow, New York: Farrar, Strauss and Giroix. Keynes, J. M., 1964, The General Theory of Employment Interest, and Money, New York: Harcourt, Brace, Jovanovich.
77. Kaustia, M., Alho, E., & Puttonen, V. (2008). How much does expertise reduce behavioral biases? The case of anchoring effects in stock return estimates. Financial Management, 37(3), 391e412.
78. Kirchgässner, Gebhard. (2008). Homo Oeconomicus: The Economic Model of Behaviour and Its Applications to Economics and Other Social Sciences. 10.1007/978-0-387-72797-4.
79. Klein, Gary, 1999, Sources of Power: How People Make Decisions, Cambridge, MA: MIT Press. Lynch, Peter, 1990, One Up On Wall Street, Penguin.
80. Kurz-Milcke, E., & Gigerenzer, G. (2007). Heuristic decision making. Marketing: Journal of Research and Management, 3(1), 48e56.
81. Latham, G. P., Budworth, M. H., Yanar, B., & Whyte, G. (2008). The influence of a manager's own performance appraisal on the evaluation of others. International Journal of Selection and Assessment, 16(3), 220e228.
82. Lebowitz, M. S., & Ahn, W.-k. (2016). Using personification and agency reorientation to reduce mental-health clinicians’ stigmatizing attitudes toward patients. Stigma and Health, 1(3), 176–184.
83. Lichtenstein, S., & Slovic, P. (1971). Reversals of preference between bids and choices in gambling decisions. Journal of Experimental Psychology, 89(1), 46.
84. Lichtenstein, S., Slovic, P., Fischhoff, B., Layman, M., & Combs, B. (1978). Judged frequency of lethal events. Journal of Experimental Psychology: Human Learning and Memory, 4(6), 551.
85. List, J. A. (2011). Does market experience eliminate market anomalies? The case of exogenous market experience. American Economic Review, 101(3), 313-17.
86. Lopes, L. L. (1991). The rhetoric of irrationality. Theory & Psychology, 1(1), 65e82.
87. Lovie, P. (1985). A note on an unexpected anchoring bias in intuitive statistical inference. Cognition, 21(1), 69e72.
88. Lowenstein, George, and Daniel Kahneman, "Explaining the Endowment Effect," working paper, Department of Social and Decision Sciences, Carnegie Mellon University, 1991.
89. Mauboussin, M., 2012, The Success Equation: Untangling Luck and Skill in Business, Sports, and Investing, Boston: HBR Press.
90. Mauboussin, Michael, 2006, More Than You Know, Finding Wisdom in Unconventional Places, New York: Columbia University Press.
91. Montier, James, 2010, The Little Book of Behavioral Investing: How Not to Be Your Own Worst Enemy, Hobeken, NJ: John Wiley & Sons.
92. Mukherjea, Saurabh, 2015, Gurus of Chaos: Modern India’s, Money Masters, New Delhi: BS Books.
93. Nebel, J. M. (2015). Status quo bias, rationality, and conservatism about value. Ethics, 125(2), 449-476.
94. Nikolaidou M, Fraser DS, Hinvest N. Physiological markers of biased decision-making in problematic Internet users. J Behav Addict. 2016 Sep;5(3):510-7. doi: 10.1556/2006.5.2016.052. Epub 2016 Aug 24. PMID: 27554505; PMCID: PMC5264418.
95. Nofsinger, John R., 2005, The Psychology of Investing, Prentice-Hall.
96. Northcraft, G. B., & Neale, M. A. (1987). Experts, amateurs, and real estate: An anchoring-and-adjustment perspective on property pricing decisions. Organizational Behavior and Human Decision processes, 39(1), 84e97.
97. Odean, T. (1998). Do investors trade too much?. Available at SSRN 94143.
98. O'Donoghue, Ted, and Matthew Rabin. 1999. "Doing It Now or Later." American Economic Review, 89 (1): 103-124.
99. Ones, D. S., Viswesvaran, C., & Reiss, A. D. (1996). Role of social desirability in personality testing for personnel selection: The red herring. Journal of Applied Psychology, 81(6), 660-679.
100. Ozer DJ, Benet-Martínez V. Personality and the prediction of consequential outcomes. Annu Rev Psychol. 2006; 57:401-21.
101. Peterson Richard, 2007, Inside the Investor’s Brain: The Power of Mind Over Money, Hoboken, NJ: John Wiley & Sons.
102. Pham, M. T. (1998). Representativeness, relevance, and the use of feelings in decision making. Journal of Consumer Research, 25(2), 144e159.
103. Plous, S. (1989). Thinking the unthinkable: The effects of anchoring on likelihood estimates of nuclear war1. Journal of Applied Social Psychology, 19(1), 67e91.
104. Pompian, M. M. (2006). Behavioral finance and wealth management. How to build optimal portfolios that account for investor biases, New Jersey.
105. Prasanna Chandra, Behavioural finance, McGraw Hill Education (India) Private Limited, 2016
106. Ritter, J. R. (2003). Behavioral Finance. Pacific-Basin Finance Journal, 11(4), 429–437.
107. Ritov, I. (1996). Anchoring in simulated competitive market negotiation. Organizational Behavior and Human Decision Processes, 67(1), 16e25.
108. Roccas, S., Sagiv, L., Schwartz, S. H., & Knafo, A. (2002). The Big Five personality factors and personal values. Personality and Social Psychology Bulletin, 28(6), 789–801.
109. Samuelson, W., & Zeckhauser, R. J. (1988). Status quo bias in decision making. Journal of Risk and Uncertainty, 1, 7-59.
110. Schkade, D. A., & Johnson, E. J. (1989). Cognitive processes in preference reversals. Organizational Behavior and Human Decision Processes, 44(2), 203e231.
111. Shah, A. K., & Oppenheimer, D. M. (2008). Heuristics made easy: An effort-reduction framework. Psychological Bulletin, 134(2), 207-222.
112. Sharot, T. (2011). The optimism bias. Current Biology, 21(23), R941-R945.
113. Simon HA. Staff and Management Controls. The ANNALS of the American Academy of Political and Social Science. 1954;292(1):95-103.
114. Shefrin, Hersh & Statman, Meir. (1984). The Disposition to Sell Winners too Early and Ride Losers too Long. Journal of Finance. 40. 777-790.
115. Shefrin, H., 2000, Beyond Greed and Fear: Understanding Behavioral Finance and the Psychology of Investing, Boston, Massachusetts: Harvard Business School Press.
116. Shefrin, H., 2007, Behavioral Corporate Finance: Decisions That Create Value, Boston, Massachusetts: McGraw-Hill Irwin.
117. Shefrin, Hersh, 2008, Ending the Management Illusion, New York: McGraw-Hill. Shiller Robert, 2013, Irrational Exuberance, Princeton: Princeton University Press.
118. Shleifer, A., 2000, Inefficient Markets: An Introduction to Behavioral Finance, Oxford, U.K.: Oxford University Press.
119. Siegel, Jeremy, 1998, Stocks for the Long Run, 2nd ed., New York: McGraw-Hill.
120. Simon, H.A., 1992, Economics, Bounded Rationality, and the Cognitive Revolution, Aldershot Hants, England, Elgar.
121. Statman, Mier, 2010, What Investors Really Want: Know What Drives Investor Behavior and Make Smarter Financial Decisions, New York: McGraw-Hill.
122. Swedroe, Larry, 2003, The Successful Investor Today, St. Martin’s Press. Taleb, Nassim, 2001, Fooled by Randomness, New York: Random House.
123. Soldz, S., & Vaillant, G. E. (1999). The Big Five Personality Traits and the Life Course: A 45-Year Longitudinal Study. Journal of Research in Personality, 33, 208-232.
124. Strong, Norman, and Xinzhong Xu. “Understanding the Equity Home Bias: Evidence from Survey Data.” Review of Economics and Statistics 85, no. 2 (May 2003): 307–12.
125. Subrahmanyam, A. (2008). Behavioural finance: A review and synthesis. European Financial Management, 14(1), 12e29.
126. Sweis, B. M., Abram, S. V., Schmidt, B. J., Seeland, K. D., MacDonald, A. W., Thomas, M. J., & Redish, A. D. (2018). Sensitivity to “sunk costs” in mice, rats, and humans. Science, 361(6398), 178-181.
127. Taleb, Nassim, 2007, The Black Swan: The Impact of the Highly Improbable, New York: Random House.
128. Tanous, Peter J., 1997, Investment Gurus, New York Institute of Finance.
129. Thaler, R. H. (1999). Mental accounting matters. Journal of Behavioral Decision Making, 12, 183-206.
130. Thaler, Richard, 1992, The Winner’s Curse: Paradoxes and Anomalies of Economic Life, Princeton: Princeton University.
131. Thaler, Richard, 2015, Misbehaving: The Making of Behavioral Economics, New York: W.W. Norton & Company.
132. Train, John, 1981, The Money Masters, New York: Harper and Row Publishers, Inc.
133. Tversky, A., & Kahneman, D. (1973). Availability: A heuristic for judging frequency and probability. Cognitive Psychology, 5(2), 207e232.
134. Tversky, A., & Kahneman, D. (1974). Judgment under uncertainty: Heuristics and biases. Science, 185(4157), 1124e1131.
135. Venture Harbour Ltd, a company registered in England and Wales with Company No. 8291791. https://www.ventureharbour.com/
136. Williams, B. (2010). Speculative bubbles dynamics and the role of anchoring. In Paper presented at the European financial management association conference. Retrieved January.
137. Wilson, T. D., Houston, C. E., Etling, K. M., & Brekke, N. (1996). A new look at anchoring effects: Basic anchoring and its antecedents. Journal of Experimental Psychology: General, 125(4), 387.
138. Wood, Arnold (Ed.), 2010, Behavioral Finance and Investment Management, Charlottesville, Virginia: The Research Foundation of CFA Institute.
139. Zweig, J., 2007, Your Money and Your Brain, New York: Simon & Schuster.
140. Zuckerman, M., Koestner, R., Colella, M. J., & Alton, A. O. (1984). Anchoring in the detection of deception and leakage. Journal of Personality and Social Psychology, 47(2), 301.
141. Baker, M., R. S. Ruback, and J. Wurgler, 2004, “Behavioral Corporate Finance: A Survey,” Working paper.
142. Barber, Brad, and Terrance Odean, 2011, “The Behavior of Individual Investors,” Hass School of Business, September 2011.
143. Barberis, N., A. Shleifer, and R. Vishny, 1997, “A Model of Investor Sentiment,” Journal of Financial Economics 49, No. 3: 307-344.
144. Basu, S., 1977, “Investment Performance of Common Stocks in Relation to their Price-Earnings Ratios: A Test of the Efficient Market Hypothesis,” Journal of Finance 32, 663-682.
145. Benartzi, Shlomo, and Richard Thaler, 1995, “Myopic Loss Aversion and the Equity Premium Puzzle,” Quarterly Journal of Economics 110, No. 1: 73-92.
146. Bernard, Victor, and Jacob Thomas, 1989, “Post-Earnings Announcement Drift: Delayed Price Response or Risk Premium?,” Journal of Accounting Research No. 27: 1-36.
147. Bikhchandani, S., D. Hirshleifer, and I. Welch, 1998, “Learning from the Behaviour of Others: Conformity, Fads, and Informational Cascades,” Journal of Economic Perspectives 12(3) (Summer), 151-170.
148. Campbell, J. Y., and R. J. Shiller, 1988, “Stock Prices, Earnings, and Expected Dividends,”
149. Journal of Finance, Vol. 43, No. 3: 661676.
150. Chan, L.K.C, N. Jegadeesh, and J. Lakonishok, 1999, “The Profitability of Momentum Strategies,” Financial Analysts Journal (Special Issue on Behavioral Finance), 80-90.
151. Cutler, D. M., J.M. Poterba, and L.H. Summers, 1989, “What Moves Stock Prices?” Journal of Portfolio Management 15(3), 4-12.
152. Daniel, Kent, David Hirshleifer, and Avanidhar Subrahmanyam, 1998, “A Theory of Overconfidence, Self-Attribution, and Security Market Under- and Over-reactions,” Journal of Finance, Vol. 53: 1839-1886.
153. Das, S., H. Markowitz, J. Scheid, and M. Statman, 2010, “Portfolio Optimization with Mental Accounts,” Journal of Financial and Quantitative Analysis 45, No. 2 (April): 311-334.
154. De Bondt, Werner 1998, “A Portrait of the Individual Investor,” European Economic Review, Vol. 42: 831-844.
155. De Bondt Werner, and Richard Thaler, 1985, “Does the Stock Market Overreact?,” Journal of Finance, Vol. 40: 793-805.
156. Ellsberg, D., 1961, “Risk, Ambiguity and the Savage Axioms,” Quarterly Journal of Economics
157. 75, 643-669.
158. Fama, Eugene, 1970, “Efficient Capital Markets: A Review of Theory and Empirical Work,”
159. Journal of Finance, Vol. 25, No. 2: 383-417.
160. Fama, Eugene, 1991, “Efficient Capital Markets: II,” Journal of Finance, Vol. 46, No. 5: 1575-1618. Fama, Eugene, and Kenneth R. French, 1992, “The Cross-Section of Expected Stock Returns,” Journal of Finance, Vol. 47: 427- 465.
161. Fama, E.F., 1998, “Market Efficiency, Long-term Returns and Behavioral Finance,” Journal Financial Economics 49, 283-306.
162. Fama, E.F, L. Fisher, M.C. Jensen, and R. Roll, 1969, “The Adjustment of Stock Prices to New Information,” International Economic Review 12, 1-21.
163. Fama, E.F., and K. R. French 1998, “Value vs. Growth: The International Evidence,” Journal of Finance 53, 1975-1799.
164. Festinger, L., 1954, “A Theory of Social Comparison Process,” Human Relations 7(2), 117-140. French, K.R., and J.M. Poterba, 1991, “Investor Diversification and International Equity Markets,” American Economic Review 81, 222-226.
165. Friedman, M., and L.J. Savage, 1948, “The Utility Analysis of Choice Involving Risk,” Journal of Political Economy 56(4), 279-304.
166. Gigerenzer, G., 1991, “How to Make Cognitive Illusions Disappear: Beyond ‘Heuristics and Biases,’” European Review of Social Psychology 2, 83-115.
167. Goetzmann, W.N., and A. Kumar, 2005, “Equity Portfolio Diversification,” Review of Finance 12, 433-463.
168. Grinblatt, M., and B. Han, 2004, “Prospect Theory, Mental Accounting and Momentum,” Journal of Financial Economics 78, 311-339.
169. Grossman, S.J., and J.E. Stiglitz, 1980, “On the Impossibility of Informationally Efficient Markets,” American Economic Review 70(3), 393-408.
170. Healy, P. M., and K.G. Palepu, 2003, “The Fall of Enron,” Journal of Economic Perspectives 17(2) (Spring), 3-26.
171. Hirshleifer, D., 2001, “Investor Psychology and Asset Pricing,” Journal of Finance 56, 1533-1597.
172. Jegadeesh, N., and S. Titman, 1993, “Returns to Buying Winners and Selling Losers: Implications for Stock Market Efficiency,” Journal of Finance 48, 65-91.
173. Jensen, M.C, and W.H. Meckling, 1979, “Theory of the Firm: Managerial Behavior, Agency Costs, and Ownership Structure,” Journal of Financial Economics 3(4)(October), 305-360.
174. Kahneman, D., J.L. Knetsch, and R.H. Thaler, 1991, “The Endowment Effect, Loss Aversion, and Status Quo Bias,” Journal of Economic Perspective 5 (No.1), 193-206.
175. Kahneman, D., and M. Riepe, 1998, “Aspects of Investor Psychology,” Journal of Portfolio Management 24 (Summer), 52-65.
176. Kahneman, D., and A. Tversky, 1979, “Prospect Theory: An Analysis of Decision under Risk,” Econometrica 47 (2), 263-291.
177. Lakonishok, J., A. Shleifer, and R. Vishny, 1994, “Contrarian Investment, Extrapolation and Risk,” Journal of Finance 49, 1541-1578.
178. Lintner, J., 1956, “Distributions of Incomes of Corporations among Dividends, Retained Earnings and Taxes,” American Economic Review 46, 97-113.
179. Lo, Andrew, and Craig Mackinley, 1988, “Stock Prices Do Not Follow Random Walks: Evidence from a Simple Specification Test,” Review of Financial Studies 1, No 1: 41-66.
180. Lopes, Lola, 1987, “Between Hope and Fear: The Psychology of Risk,” Advances in Experimental Social Psychology 20: 255-295.
181. Markowitz, H., 1952, “Portfolio Selection,” Journal of Finance 7(1), 77-91.
182. Mehra, R., and E.C. Prescott, 1985, “The Equity Premium: A Puzzle,” Journal of Monetary Economics 15 (2), 145-161.
183. Piotroski, J.D., 2000, “Value Investing: The Use of Historical Financial Statement Information to Separate Winners from Losers,” Journal of Accounting Research 38 (Supplement), 1-41.
184. Shefrin, H. and M. Statman, 1985, “The Disposition to Sell Winners Too Early and Ride Losers Too Long: Theory and Evidence,” Journal of Finance 40. No. 3(July), 253-282.
185. “Behavioral Capital Asset Pricing Theory,” 1994, Journal of Financial and Quantitative Analysis 29, No. 3 (September): 323-349.
186. “Making Sense of Beta, Size, and Book-to-market,”, 1995, Journal of Portfolio Management 21(2), 26-34.
187. “Behavioral Portfolio Theory”, 2000, Journal of Financial and Quantitative Analysis, 35, No. 2 (June), 127-151.
188. Shiller, R.J., 1981, “Do Stock Prices Move Too Much To Be Justified by Subsequent Changes in Dividends?,” American Economic Review 71(3), 421-436.
189. Shiller, R.J., 1984, “Stock Prices and Social Dynamics,” Brookings Papers on Economic Activity 2, 457-498.
190. Shleifer, A., and L. H. Summers, 1990, “The Noise Trader Approach to Finance,” Journal of Finance 4(2), 19-33.
191. Shleifer, A., and R. Vishny, 1997, “The Limits of Arbitrage,” Journal of Finance 52, 35-55. Smith, V.L. 1994, “Economics in the Laboratory,” Journal of Economics Perspectives 8(1), 113-131. Statman, M., K.L. Fisher, and D. Anginer, 2008. “Affect in a Behavioral Asset-Pricing Model.”
192. Financial Analysts Journal, Vol. 64, No. 2(March/April): 20-29.
193. Thaler, R. H., 1999, “Mental Accounting Matters,” Journal of Behavioral Decision Making 12, 183-206.
194. Thaler, R. H., and S. Benartzi, 2004, “Save More Tomorrow: Using Behavioral Economics to Increase Employee Saving,” Journal of Political Economy 112,164-187.
195. Tversky, A., and D. Kahneman, 1973, “Availability: A Heuristic for Judging Frequency and Probability,” Cognitive Psychology 4, 207-232.
196. Tversky, A., and D. Kahneman, 1974, “Judgment under Uncertainty: Heuristics and Biases,” Science 185, 1124-1131.

