

Expressions of Irrational Investment Behaviour and Proposals to Reduce the Irrational Behaviour

Yige Li^{1,a,*}

¹LMU Munich School of Management, Ludwig Maximilian University of Munich, Munich, 80539, Germany

a. yigeli1106@outlook.com

*corresponding author

Abstract: Behaviour finance gained more and more weight in the development of finance theory in comparison to standard finance theory which is dominated by the efficient market hypothesis. As a field of behavioural economics, it combines psychology and finance to understand how human behaviour and cognitive biases impact financial decision-making. Some market anomalies which seem strange or impossible according to standard finance theory can be understood and explained with the help of behavioural finance theory. Through analysis and literature review, this paper explores the common expressions of irrational behaviour such as representativeness, herd effect, anchoring, overconfidence, and their effect on the investment financial market. This paper finds that people can be easily influenced by any given information. Individuals' personalities and social backgrounds also play a decisive role in making investment decisions. Therefore, some possibilities and advice to reduce the losses caused by human cognitive biases are also provided in the paper.

Keywords: behaviour finance, representativeness, herding, disposition effect, loss aversion

1. Introduction

Traditional Finance or Standard Finance refers to the framework used to analyse and understand financial markets and investment decisions. It encompasses various concepts and models that are widely used in the field of finance. The basic principle is the Efficient Market Hypothesis (EMH) and Law of One Price.

Efficient Market Hypothesis refers to a theory that financial markets are efficient, meaning that the principle of Law of One Price holds—that securities or portfolios with the same cash flows must have the same price. Beyond that, there are three forms of efficient market. The weak form only includes the history of past prices, whereas the price immediately incorporates all information with the strong form. In reality, people mostly deal with a weak form of an efficient market. The central idea behind the EMH is if the prices of financial assets already incorporate all relevant information, making it challenging for investors to identify undervalued or overvalued assets.

An indispensable premise is the investors' rationality; in other words, the investor's goal is to maximize expected monetary utility. However, according to Meir Statman, there is a difference between rational and "normal" investors [1]. In reality, people can be easily influenced by emotions, cognition and society. Therefore, it is important to understand the expressions of irrational behaviour and the effect of this behaviour on the market in combination with market anomalies. The paper also

includes measures to help people to reduce the bad influence. Different behaviour financial models are explored by different professional insiders; in the following, we will classify and explain them accordingly. Summarised by Glaser et al. in 2003, the behavioural finance models can be categorised in two different manners: belief-based and preference-based. The belief-based model focuses on how individuals form their beliefs and make investing decisions based on those beliefs, provided that people are easily influenced by cognitive biases and heuristics, thus deviating from rationality [2].

The preference-based model shows the influence of investors' preferences on decision-making based on the prospect theory developed by Kahneman and Tversky in 1979. It suggests that factors such as risk aversion, loss aversion, and mental accounting influence investors' decision behaviour.

The paper summarizes the specific and concrete irrational behaviour such as representativeness, herding effect, disposition effect, mental account, etc., and analyzes their expression on the investment market. This paper includes a large-scale of expressions of irrational behavior and can remind people of common heuristic astray as well as proposals to decrease these mistakes.

2. Expressions of Irrational Investment Behaviour

2.1. Representativeness

One of the most typical heuristic behaviour is representativeness, first described by psychologists Amos Tversky and Daniel Kahneman during the 1970s [3]. Making judgments based on representativeness is intended to work as a mental shortcut, allowing people to make decisions quickly, using one attribute to imply another. Similar information that had been experienced in the market may be interpreted as a pattern as Hirshleifer contends that an investor might accredit a single reason to a company's growing stock while ignoring the influence of other factors due to representativeness bias [4]. Consequently, investors may overreact to this reason and make irrational decisions. Investors frequently purchase equities with high abnormal returns in recent history because of the representativeness bias.

2.2. Herding Effect

The herd effect refers to the tendency of investors to imitate the behaviour of others and gather limited information; in extreme conditions, they even ignore the information they already processed. The underlying reason is the lack of sufficient understanding of market information and an inability to make reasonable predictions about future market changes.

As a form of irrational behaviour, the herd effect is particularly evident in investment decision-making. In the stock market, it is common to see a large group of investors simultaneously buying or selling a particular stock or entering and exiting a specific industry sector [5]. It is one of the reasons for over-/undervalued stocks. Furthermore, price and market can be manipulated. This effect especially occurs during market distress, for instance, market anomalies, price bubbles, and rumours [6].

2.3. Disposition Effect

People are more inclined to sell the stocks that are making a profit and continue holding the stocks that have already brought losses. The irrational individuals act in this way with the hope that the losses are just temporary, and the price of the stock will rise again in the future. By holding these, the losses are not actually realized and only stay in the book. Nevertheless, in accordance with traditional financial theory, we should preserve rising stocks and sell falling stocks in time to stop losses. The deep mechanism behind this behavior is loss aversion: people are more willing to take risks in order to avoid risk rather than taking risks to maximize their own interests.

2.4. Overconfidence

From the financial perspective, overconfidence is reflected in four aspects: overestimation of the precision of private information; exaggeration of their abilities above average effect; hallucination that they can control random tasks and excessive optimism, which is characterised by overestimation of success and underestimation of risks [2].

One of the results caused by overconfidence is the high trading volume in the market with the presence of overconfident traders (as shown in Table 1).

Table 1: Relative and absolute trading volume in major stock markets (2002) [2].

	US	UK	Japan	Germany	France
Trading volume in US\$ trn	10.31	4.00	1.57	1.21	1.10
% market capitalization	100	215	70	180	115

The miscalibration and the illusion of control over the profit lead people to question public information and tend to believe in “insider information” and thus frequently conduct transactions. Evidence shows that overconfident traders conduct frequent trades, and the trading volume positively correlates with the degree of confidence [2].

On the one hand, according to Odean, overconfident traders exhibit lower expected utility compared to rational traders and tend to hold unwell-diversified portfolios. This is because frequent transactions increase the probability of making mistakes.

In contrast to Odean’s finding, Kyle and Wang discover that overconfident traders have the potential to achieve higher expected profits or experience higher expected utility than rational traders, as overconfidence acts as a mechanism for committing to aggressive trading strategies.

These anomalies, which cannot be explained by traditional economic theory, may provide investment opportunities; however, they also lead to market inefficiency.

2.5. Systematic Bias

Investors often pay too much attention to new information but underestimate and even ignore the old representative information. For example, if a stock price continues to fall, investors will have a pessimistic view of this stock, be oversensitive to any bearish news, and be numb to the good publicity. This prompts the investors to sell the stock and hence forms a ripple effect so that the stock price continues to be underestimated. This kind of overreaction is also a cause for excessive volatility of stock prices and positive or negative Alpha, which implies over- or underestimation of a stock. Prospect theory is an integral part of the preference-based model. Individuals evaluate potential outcomes based on their perceived gains and losses rather than the outcome itself. Barberis, Huang, and Santos’ model demonstrates that positive cash flow news drives stock prices up, generating early gains for investors [7]. At this point, investors show reduced aversion to losses, leading them to discount future cash flows at a lower rate, thereby pushing stock prices to an excessively high level. Conversely, negative cash flow news causes stock prices to decline, resulting in early losses for investors. In this case, investors exhibit heightened aversion to losses, leading them to discount future cash flows at a higher rate, pushing stock prices to an excessively low level.

2.6. Loss Aversion

If there are two options: one is to directly receive \$25, while the other is being given \$50 and then having to give back \$25. The expected utility is precisely \$25 and indifferent between the two options. However, individuals are most likely to choose to receive straight cash because a single gain is generally observed as more favourable than initially having more cash and then suffering a loss. Kahneman and Tversky proposed that losses have a more significant emotional impact than gains of the same amount [8].

In addition, If an investor is loss averse and regularly assesses the performance of their portfolio, there is a significant chance that they will observe losses. As a result, they will demand a higher risk premium than an entirely rational investor unaffected by short-term fluctuations.

2.7. Framing

Framing refers to the presentation of information that influences the behaviour and decisions of individuals in the market. The following instance illuminates the difference between positive and negative framing:

Positive framing: The medication results in a 90% survival rate.

Negative framing: The medication results in a 10% mortality rate.

Although both statements imply the same meaning, most people prefer the positive framing, which illustrates a high survival rate.

Research from Weber, Keppe, and Meyer-Delius further emphasised how the gains and losses of framing can affect the market [9]. Investors are willing to pay higher prices for assets when they hold a short position at the start of a trading period compared to when they hold a long position, even though the expected value of both portfolios is identical.

2.8. House Money Effect

It is defined as a gambler's heightened propensity to bet after gain, in which people display a stronger stomach for risk. This concept originated from observing people using their winnings to continue gambling, considering the previous gains separate from their own funds. Because they see the gains as "house money" rather than their own, they are more likely to take on more considerable risks due to this psychological separation. As a result, people may make riskier decisions when things are going well, but this behaviour can also result in higher risks and possible losses.

2.9. Mental Accounting

The 'mental account' in this model refers to investors splitting their investments into separate accounts, each with specific objectives and constraints. In this case, investors can divide their equity portfolio into separate accounts, each focusing on a specific security. This means that investors may ignore the correlation between different securities and focus more on the independent performance of each security. Such behaviour may make the investors less cognisant of overall market risk [10].

3. Proposals to Reduce the Irrational Behaviour

3.1. Professional Knowledge

The establishment of the American security market dates back to the late 18th and early 19th century. After a long period of development, the stock market is maturer and more efficient in comparison to China. The market mainly consists of professional investment agencies, and individual investors are rather rare. Under these circumstances, professional knowledge is sufficient.

However, the percentage of retail investors in China's market is still huge. A vast number of individual investors lack professional knowledge and ability in investment and fail to establish a clear understanding of the macroeconomic development situation, investment risks, and industry development status in the investment process. The Herding Effect is powerful, and the above-mentioned expressions can be largely observed in the market. To avoid the fate of being manipulated and used, investors should learn more financial knowledge, analyse the financial statement, and form their own understanding and opinion. By possessing this sharp insight, they will be more competent to find high-quality stocks, and identify gains and losses.

3.2. Ability to Avoid Mistakes

Investors need to learn to distinguish reliable information. This requires self-judgment and foresight abilities. It is important to stay objective and avoid bias and personal preferences. Another point to be mentioned is to stay away from herding. The judgments of the majority may rely on false information in the investment market. Lastly, it is crucial to avoid overreacting. While verifying new information, one should not abandon existing correct old information and make rational investment decisions.

3.3. Self-Evaluation

Investors can develop their investment strategy or learn the strategy from well-known professionals by reading their publications. The strategy can be basic and include, e.g. diversifying the risk by not putting all eggs in the same basket, holding stocks in the long run to avoid short-term fluctuation and so forth. Besides, investors should often look back at their judgement and summarise the good or bad actions to see what they can improve by the next decision. It is crucial to learn from previous failures to avoid further mistakes.

3.4. Connections and Teamwork

Enhancing rational behaviour can be achieved by improving connections and teamwork of investors. The key word is collective wisdom sharing since they share a common goal of maximization of utility. By bringing together a diverse range of investors with varying experiences, expertise, and backgrounds, a richer and more comprehensive understanding of the investment market can be developed. Through sharing their personal investment strategies, evaluating the success of past decisions, and discussing different investment cases, investors can collectively learn from each other's triumphs and mistakes. This, in turn, encourages more rational behavior by promoting a broader perspective and fostering an environment of continuous learning.

4. Conclusion

The paper deals with the common expressions of irrational behaviour such as representativeness, herd effect, anchoring, overconfidence and their effect on the investment financial market as well as some possibilities to reduce the losses. The market consists of people and people are irrational. By analysing irrational investing behaviour, people have a deep insight into the market anomalies as well as the market mechanism. The various behaviour encompasses heuristics, preference and personality. Heuristic effects are representativeness, gambler's fallacy, anchoring, herding effect, and the disposition effect. There are also other effects like hindsight, omission bias, adjustment, etc., which are not mentioned in this paper. The personal preference or the prospect theory includes framing, regret aversion, loss aversion, mental accounting and house money effect. To be mentioned is that individuals' personalities and social backgrounds also play a decisive role in making investment

decisions. These factors sometimes even contradict themselves, meaning that different people may have quite the opposite mental preference. These factors do not show up once a time, it is mixed, and the mixture determines which kind of decision will prevail. With the increasing application of artificial intelligence and machine learning in the financial sector, future research may center on understanding the role of AI in investment decision-making. Researchers may explore how investors interact with intelligent algorithms. However, ethical issues remain a controversial theme. Besides, it is skeptical that AI could actually stimulate human nature and emotions.

References

- [1] Statman, M. (2008). *What Is Behavioral Finance? Handbook of finance*, 79–84. <https://doi.org/10.1002/9780470404324.hof002009>
- [2] Glaser, M., Nöth, M & Weber, M. (2003). *Behavioral Finance. Lehrstuhl für Allgemeine Betriebswirtschaftslehre, Finanzwirtschaft, insbesondere Bankbetriebslehre, Universität MannheimMannheim2004*. <https://madoc.bib.uni-mannheim.de/2770>
- [3] Tversky, A. and Kahnman, D. (1979). *Judgment under uncertainty: heuristics and biases. The Econometric Society*, 263-292. <https://doi.org/10.2307/1914185>
- [4] Hirshleifer, D. (2001). *Investor Psychology and Assets Pricing. The journal of Finance*, 56, 4, 1533-1597.
- [5] Geetika Madaan, Sanjeet Singh. "An Analysis of Behavioral Biases in Investment Decision- Making", *International Journal of Financial Research*, 2019
- [6] Mertzanis & Allam, (2018)Mertzanis, C., & Allam, N. (2018). *Political Instability and Herding Behaviour: Evidence from Egypt's Stock Market. Journal of Emerging Market Finance*, 17(1), 29-59. <https://doi.org/10.1177/0972652717748087>
- [7] Nicholas B, Huang M, Santos T. *Prospect Theory and Assets Price. Quarterly Journal of Economics*, 2001, 116: 1~53
- [8] Kahneman D, Tversky A. *Prospect Theory: An Analysis of Decision under Risk. The Econometric Society Vol. 47, No. 2 (Mar., 1979), pp. 263-292 (29 pages), 1979* <https://doi.org/10.2307/1914185>
- [9] Weber, M. & Keppe, H. & Meyer-Delius, G. (2000). *Framing effects in experimental markets, Journal of Economic Behavior and Organization*, 41, 159-176.
- [10] Barberis, Nicholas, and Ming Huang, 2001, *Mental accounting, loss aversion, and individual stock returns, Journal of Finance* 56, 1247-1292.